2005 REPORT OF ACTIVITY BY THE VIRGINIA AQUATIC RESOURCES TRUST FUND

April 10, 2006

I. INTRODUCTION

This report outlines contributions (revenues), impacts, and mitigation projects associated with the **Virginia Aquatic Resources Trust Fund** (the Fund), an in-lieu-fee (ILF) mitigation partnership administered by The Nature Conservancy of Virginia (TNC) and the Norfolk District Corps of Engineers (Corps). The Fund is one of several compensatory mitigation options available to permittees to fulfill mitigation obligations mandated by their permits.

The Fund operates in accordance with by the Memorandum of Understanding (MOU) between TNC and the Corps. A primary goal of the Fund is to accomplish "no net loss" of aquatic resource acreage and/or functions using a watershed approach. Contrary to other mitigation options, the Fund seeks to provide a net gain of aquatic resource areas whenever possible by pooling funds, employing flexibility, and operating at beneficial economies of scale. The overall and primary operational concept of the Fund is to use resources paid from many small aquatic resource impacts efficiently to produce the largest mitigation projects with the most benefits to the aquatic environment and natural heritage elements such as endangered species, unique communities, and at times historic resources. Fund mitigation sites receive permanent protection by several methods including conservation easements, deed restrictions, dedications as natural area preserves, fee simple ownership by TNC as governed by the MOU, and other means as appropriate.

Virginia Department of Environmental Quality (DEQ) regulations state that DEQ may allow use of ILF mitigation to compensate for impacts authorized by its permits only after approval by the State Water Control Board in general or on a case by case basis. DEQ recently gained conditional approval for use of the Fund, and advised the Corps of this approval by letter of January 10, 2006. The purpose of this report is to provide information about the Fund for public use and to help address the items referenced in the DEQ's Virginia Water Protection (VWP) Regulations at 9 VAC (25-210-115E) specifically:

(1) an accounting that details "contributions received" (referred to as revenues)
(2) the "acreage and type of wetlands or streams preserved, created, or restored in each watershed"
(3) the "mitigation credits contributed for each watershed of project impact".

This report updates the 2004 report and incorporates additional information requested by DEQ. The information is divided into an Executive Summary (for quick review of the Fund's performance) and an Overview at the beginning, and three appendices for more detailed non-tidal wetland, stream, and tidal wetland mitigation project information at the end.

II. EXECUTIVE SUMMARY

Below are two tables that summarize in general the impacts and mitigation activity by the Fund. More specific details can be found in later sections of the report. The first table summarizes impacts and mitigation provided for non-tidal wetlands. The second table summarizes impacts and mitigation provided and pending for streams. Legends are included below each table and should be referenced when using the tables.

Non Tidal Wetland Mitigation Summary							
	# of Permits	Acres of Impacts	Wetland Restoration	Wetlands Preserved	Upland Restored	Upland Preserved	Total Mit Acres
Years of Operation 1995-2005	437	184.187	406.50	1824.74	279.09	415.62	2,925.95
	Avg Impact Per Permit	Revenues From Impacts	Allocated Funds	Cost in Impacts	Mitigation Liability	Mitigation Credit	Credit Balance
	0.69	$13,714,365.41	$5,270,455.00	85.87	328.70	968.22	639.52

Number of Permits: The number of permits that used the Fund for NT Wetland mitigation requirements.
Acres of Impacts: The total acreage of wetlands impacted from the (437) Permits that used the Fund.
Wetland Restoration: Primarily wetland restoration acres, with limited wetland creation acres.
Wetlands Preserved: Non Tidal wetland acres preserved.
Upland Restored: Upland acres that required restoration back to natural forested buffers.
Upland Preserved: Upland acres of natural vegetated buffer that were preserved.
Total Mitigation Acres: The Sum of all mitigation acres (irrespective of ratios).
Revenues From Impacts: The amount of revenues paid into the Fund for the total impacts.
Allocated Funds: The amount of funds committed to mitigation projects as of 2005.
Cost in Impacts: (Funds Allocated / Current Assessed Price per acre impacted) This is the number of impacted wetland acres that correspond to the Allocated Funds to date. (for example, 85.87 acres of impacts resulted in revenues of $5.27 million (the Allocated Funds; 38% of Total Revenues)). The balance of funds ($7.33 million) will be spent on additional future mitigation projects and will increase the ratios.
Mitigation Liability: The total Acres of Impacts multiplied by standard mitigation ratios.
Mitigation Credit: Mitigation Acres of all types adjusted for standard mitigation ratios; to be applied to the mitigation liability.
Credit Balance: The surplus or deficit of mitigation credit.
Avg Impact Per Permit: The impact acres divided by the number of permits.

Based upon these numbers, the Fund is exceeding the no-net-loss standard for non-tidal wetlands on a program wide basis. For the total Acres of Impacts (184.187 acres), the fund is achieving ratios of 2.37:1 for Wetland Restoration, 10.2:1 for Wetland Preservation, 1.9:1 for Upland Buffer Restoration, and 2.4:1 for Upland Buffer Preservation. If compared to the Cost in Impacts (85.87 acres), the ratios would roughly double (4.7:1 for restoration), and future mitigation projects accomplished with un-allocated funds will also increase these ratios.

Stream Impacts and Mitigation Summary							
Years of Operation 2001-2005	# of Permits	Linear Feet of Impacts	Stream Restoration	Stream Preservation	Upl Buffer Restoration	Upl Buffer Preserved	Mitigation Linear Feet
	157	104,451	4,293	6,008	10,400	15,276	35,977
	Revenues From Impacts	Allocated Funds	Cost in Impacts	% Revenues Allocated	Pending Allocations	Pending Proj Linear Feet	Pending % of Revenues
	$13,016,654.62	$790,988.00	6347	6.08	$2,812,739.50	392,166	22

Number of Permits: The number of permits that utilized the Fund to meet stream mitigation requirements.
Linear Feet of Impacts: Total stream linear footage (LF) impacted from the (157) permits that used the Fund.
Stream Restoration: Primarily stream restoration, with limited stream stabilization (104 lf).
Stream Preservation: Stream LF preserved.
Upland Buffer Restoration: Riparian buffer LF that required restoration back to natural forested buffers.
Upland Buffer Preserved: Riparian buffer LF that was preserved.
Total Mitigation Linear Feet: The Sum of all mitigation linear feet, (irrespective of ratios).
Revenues From Impacts: The amount of revenues paid into the Fund for the total LF of impacts.
Allocated Funds: This shows the amount of funds committed to mitigation projects as of 2005.
Cost in Impacts: (Funds Allocated / Total Revenues * Total Linear Feet of Impacts) This is the number of impacted stream linear feet that correspond to the Funds Allocated to date. The balance of funds ($12.2 million) will also be spent on future additional mitigation projects and will increase the LF of mitigation.
% Revenues Allocated: This shows the % of total revenues represented by the current amount of funds allocated to mitigation projects.
Pending Allocations: This shows the amount of funds requested or allocated to pending projects not acquired at this time.
Pending Project Linear Feet: The Sum of all mitigation linear feet from pending or requested projects.
Pending % of Revenues: This shows the % of total revenues represented by the requested or pending project allocations.

Based upon these numbers, the Fund is not meeting a one-to-one replacement or functional standard for stream impacts on a program wide basis. This is because stream revenues only accrued in significant amounts after 2004 and because of a lack of an agreed to stream crediting methodology between DEQ and the Corps. However, based upon the size of the pending projects, it appears that they will provide significant compensation for impacts and such funds may be allocated next year. The Fund is currently negotiating several very large stream projects that will significantly increase the stream mitigation linear footages. Assuming a crediting methodology is agreed to, that standard will be applied to stream impacts and mitigation projects.

III. OVERVIEW INFORMATION BY RESOURCE TYPE

A. NON-TIDAL WETLANDS

Below are three tables that provide information about non-tidal wetlands. Table 1 includes impacts, revenues, and permits by year; Table 2 includes impacts, mitigation liability, revenues, and allocated funds by river or estuary basin; and Table 3 includes a mitigation credit summary of the more detailed tables in Appendix I.

Table 1 shows that there may be a decline in permits using and revenues paid into the Fund in 2005. There are several current factors which may influence the future performance of the Fund. The Corps and EPA have proposed a new Mitigation Rule (Federal Register, Vol 71,

No. 59; March 28, 2006). If adopted, this proposed rule would require that ILF programs be converted to Banks or "cease selling credits" within 5 years of final issuance of the rule. Another factor is the DEQ policy requiring the use of banks over ILF programs if bank credits are available to compensate for permitted impacts, and the concurrent increased use of State Programmatic General Permits.

Since 1995, 437 non-tidal wetland impact projects have used the Fund as mitigation for permitted impacts. A legend is provided below the Table to explain each of the column headings and figures provided.

TABLE 1: IMPACTS, REVENUES, AND PERMITS BY YEAR

NON TIDAL WETLANDS				
YEARS	**IMPACTS (in acres)**	**REVENUES**	**# of PERMITS**	**AVG IMPACT PER PERMIT**
1995	2.900	$65,000.00	2	1.45
1996	20.520	$460,225.00	13	1.58
1997	26.000	$1,305,486.00	16	1.63
1998	16.265	$779,260.40	21	0.77
1999	13.620	$967,583.10	22	0.62
2000	7.355	$835,342.56	31	0.24
2001	12.099	$1,243,900.72	54	0.22
2002	20.122	$2,015,187.21	86	0.23
2003	28.436	$3,238,789.54	88	0.32
2004	30.259	$1,973,450.18	56	0.54
2005	6.611	$830,140.70	48	0.14
11	**184.187**	**$13,714,365.41**	**437**	**0.69**

Years: The years of operation by the Fund when revenues were received.
Impacts: The total acreage of wetlands impacted from the (437) Permits that used the Fund.
Revenues: The amount of revenues paid into the Fund for the total impacts.
Number of Permits: The number of permits that utilized the Fund to meet mitigation requirements.
Avg Impact Per Permit: The impact acres divided by the number of permits.

Table 2 shows non-tidal wetland information by each of the 13 basins, its impacts, the mitigation liability, revenues, and funds allocated to mitigation projects for each basin. Basins were segregated using DEQ's 303d list categories. Basins experiencing the highest level of impacts are the Chesapeake Bay, Chowan, Middle and Lower James, Potomac, Rappahannock, Tennessee, and York. Several of these basins have only experienced impacts greater than 5 acres as a more recent occurrence. The impacts were broken into Cowardin type (PFO, PSS, or PEM) and then multiplied by standard mitigation ratios required for each type (2:1, 1.5:1, and 1:1) to obtain the mitigation liability. The Fund prioritizes its search for mitigation projects by the basins with the highest impacts that have not been compensated. A legend is provided below the table to explain the categories.

TABLE 2: IMPACTS, LIABILITY, REVENUES, AND ALLOCATIONS
BY BASIN

NON TIDAL WETLANDS				
		Mitigation		Funds
Basin	Impacts	Liability	Revenues	Allocated
Atlantic Ocean	0.113	0.113	5,779.20	0.00
Chesapeake Bay	14.903	27.979	1,569,666.85	599,362.00
Chowan	33.312	59.670	1,051,707.46	1,401,351.00
Upper James	2.943	4.914	133,696.68	0.00
Middle James	20.048	36.481	1,717,215.62	366,450.00
Lower James	65.425	125.700	4,204,058.51	1,780,092.00
New	0.519	0.566	30,730.47	0.00
Potomac	6.772	10.550	1,207,221.71	150,000.00
Rappahannock	9.825	18.590	1,439,217.00	24,000.00
Roanoke	3.524	5.172	272,498.20	0.00
Shenendoah	3.990	4.910	349,020.38	0.00
Tennessee	13.890	17.027	577,086.60	0.00
York	8.923	17.030	1,156,466.58	949,200.00
Totals >	184.187	328.70	13,714,365.26	5,270,455.00

Basin: Basins are major waterways such as river basins, the Chesapeake Bay, or the Atlantic Ocean.
Impacts: The total acreage of wetlands impacted from the (437) Permits that used the Fund.
Mitigation Liability: The acreage of mitigation required based on wetland impact classification and standard ratios.
Revenues: The amount of funds placed in the Fund for the Impacts in each basin.
Funds Allocated: This shows the amount of funds committed to mitigation projects in each basin.

Table 3 shows non-tidal wetland mitigation information for each of the 13 basins, along with impacts, the mitigation liability, compensation credit, credit balance, mitigation types, and the cost in wetland impacts that corresponds to the funds allocated. The impacts were broken into Cowardin type (PFO, PSS, or PEM) and then multiplied by standard mitigation ratios required for each type (2:1, 1.5:1, and 1:1) resulting in the mitigation liability. The types of mitigation were also weighted by standard mitigation ratios for each type of mitigation and summed to reach the mitigation credit provided by the aggregate of mitigation projects per basin. This provides the compensation credit figures. Mitigation types are wetlands established (wetland restoration acres that have been constructed but are undergoing monitoring for success), preserved, and upland buffer restoration and preservation acres. The cost in impacts are the funds allocated to mitigation projects in each basin divided by the average dollars paid per acre of impacts for that basin. This provides the actual acres of wetland impacts realized to produce the mitigation accomplished. This figure is often well below the acres of mitigation provided and indicates a favorable return on mitigation for the impacts. **In the aggregate, the Fund has provided 406 acres of restoration, 1824 acres of preservation, and 694 acres of upland buffers for roughly 86 acres of wetland impacts.** A legend is provided below the table to explain the categories. Underlined acres have not been delineated or surveyed in the field and were estimated by use of Geographic Information System (GIS) and information from field visits.

TABLE 3: IMPACTS, LIABILITY, COMPENSATION CREDIT, CREDIT BALANCE, MITIGATION TYPES, AND COST IN WETLAND IMPACTS BY BASIN

NON TIDAL WETLAND MITIGATION CREDIT SUMMARY TABLE									
Basin	Impacts	Mitigation Liability	Comp Credit	Credit Balance	Wetland Estab	Wetland Pres	Upland Rest	Upland Pres	Cost in Impacts
Atlantic Ocean	0.113	0.113	0.000	-0.113					0.00
Chesapeake Bay	14.903	27.979	104.250	76.271	15.88	125.79	21.33	193.63	5.43
Chowan	33.312	59.670	459.970	400.300	209.62	1215.05	36.88	110.19	51.66
Upper James	2.943	4.914	0.000	-4.914					0.00
Middle James	20.048	36.481	41.810	5.329	10.00		79.53		3.32
Lower James	65.425	125.700	184.360	58.660	91.00	389.60	23.00	46.80	16.12
New	0.519	0.566	0.000	-0.566					0.00
Potomac	6.772	10.550	35.730	25.180	10.00	50.00	22.65	50.00	0.60
Rappahannock	9.825	18.590	22.960	4.370					0.14
Roanoke	3.524	5.172	0.000	-5.172					0.00
Shenendoah	3.990	4.910	0.000	-4.910					0.00
Tennessee	13.890	17.027	0.000	-17.027					0.00
York	8.923	17.030	119.140	102.110	70.00	44.30	95.70	15.00	8.60
Totals >	184.187	328.70	968.22	639.518	406.50	1824.74	279.09	415.62	85.87
Ratios Based on the Total Acres of Impacts (184.187) >					2.21	9.91	1.52	2.26	
Ratios Based on Impact Cost by Funds Allocated (85.87) >					4.73	21.25	3.25	4.84	

Basin: Basins are major waterways such as river basins, the Chesapeake Bay, or the Atlantic Ocean.
Acres of Impacts: The total acreage of wetlands impacted from the (437) Permits that used the Fund.
Mitigation Liability: The total Acres of Impacts multiplied by standard mitigation ratios.
Compensation Credit: The credit from mitigation projects, after ratios have been applied.
Credit Balance: The surplus or deficit of mitigation credit.
Wetland Estab(lishment): Primarily wetland restoration acres, with limited wetland creation acres.
Wetland Pres(ervation): Non Tidal wetland acres preserved.
Upland Rest(oration): Upland acres that required restoration back to forested natural buffers.
Upland Pres(ervation): Upland acres of natural vegetated buffer that were preserved.
Wetland Enhancement**:** Wetland enhancement acres were not included to prevent double counting of acres.
Acquired Acres: We did not include wetland acres "acquired but not yet restored" although a number of acres are in this scenerio. These acres are noted in the tables in the appendices.
Cost in Impacts: (Funds Allocated / Current Assessed Price per acre impacted) This is the number of impacted wetland acres that correspond to the Allocated Funds to date. (for example, 85.87 acres of impacts resulted in revenues of $5.27 million (the Allocated Funds; 38% of Total NT Wetland Revenues)). The balance of funds ($7.33 million) will be spent on additional future mitigation projects and will increase the ratios.

On a program wide basis, the Fund has exceeded the goals of no net loss of wetland acreage and function. Although mitigation projects have not been accomplished in all of the basins, the fund will address the net loss of wetlands in all basins as soon as practicable. The Fund prioritizes its mitigation efforts by those basins with the highest impacts. Because the mitigation ratios are generally higher than normal mitigation options, temporal losses are compensated and in some basins, the mitigation is accomplished well prior to future impacts. The Fund seeks this condition in all basins.

B. STREAMS

Below are three tables that provide information about stream impact and mitigation activity associated with the Fund. Table 4 includes impacts, revenues, and permits by year; Table 5 includes impacts, weighted mitigation liability, revenues, currently allocated funds, and requested or allocated funds with project acquisition pending by river or estuary basin, and Table 6 includes a mitigation credit summary. More detailed project summaries are contained in Appendix II.

Table 4 shows several trends, most recent being an increase in revenues, impacts, and permits using the Fund. This is primarily due to policy changes by the permitting agencies and requirements for stream mitigation for stream impacts. Resulting from changes in the Regulatory Program in 2001, impacts to wetlands and streams were segregated and treated as separate mitigation categories (the Trust Fund began reporting them in 2003). With more permits requiring stream mitigation, more potential users began turning to the ILF option to satisfy their mitigation requirements. Also, because of its complexity and the lack of an agreed upon mitigation crediting method by the DEQ and Corps, few stream mitigation banks have been established in Virginia. First quarter 2006 figures appear to be consistent with 2005 figures.

Since 2001, **157** projects impacting streams have used the Fund as mitigation for permitted impacts. This saved the agencies significant time in mitigation plan review because stream mitigation plans are extremely complex and their review is labor intensive. Other mitigation options were often unattractive and use of the Fund avoided small individual projects in favor of landscape scale approach undertaken within a conservation framework. The Fund tracks impacts and mitigation projects by HUC and uses the "HUC plus adjacent HUC" within same river basin standard where appropriate, although not required by law. A legend is provided below the chart to explain each of the column headings and figures provided.

TABLE 4: STREAM IMPACTS, REVENUES, AND PERMITS BY YEAR

YEAR	IMPACTS (lf)	REVENUES	# of PERMITS	AVG IMPACT Per PERMIT
2001	5973	550,285.80	6	996
2002	1115	115,565.40	3	372
2003	2576	274,785.00	3	859
2004	40,714	4,646,363.48	57	714
2005	55,095	7,422,213.58	88	626
	105,473	**$13,009,213.26**	**157**	**735**

Years: The years of operation by the Fund when revenues were paid.
Impacts: The linear footage of streams impacted that were compensated by use of the Fund.
Revenues: The amount of funds placed in the Fund for the Impacts.
Number of Permits: The number of permits that utilized the Fund to meet mitigation requirements.
Avg Impact Per Permit: The impact linear footage divided by the number of permits.

Table 5 outlines by basin the linear feet of impacts incurred in each basin, revenues, funds allocated to mitigation projects, and funds allocated or requested for pending projects not yet acquired. Once a methodology is agreed to, which we hope will happen this year, this annual report can reflect stream mitigation crediting on that basis. The requested/allocated funds for pending projects column reflects the amount of activity and projects sites currently under negotiation by the Fund. A legend is provided below the chart to explain each of the column headings and figures provided.

TABLE 5: IMPACTS, REVENUES, ALLOCATED FUNDS, AND REQUESTED/ALLOCATED FUNDS BY BASIN THROUGH 2005

	LF		Allocated	Req/Allocated
Basin	Impacts	Revenues	Proj Acquired	Proj Pending
Atlantic Ocean	0	0.00	0.00	0.00
Chesapeake Bay	843	64,702.20	166,138.00	0.00
Chowan	834	80,164.00	0.00	0.00
Upper James	0	0.00	0.00	0.00
Middle James	17,737	2,371,671.67	385,000.00	0.00
Lower James	11,066	1,450,227.61	5,600.00	0.00
New	78	6,318.00	0.00	0.00
Potomac	52,028	6,318,288.98	800.00	3,300,000.00
Rappahannock	6,612	770,164.00	0.00	1,600,000.00
Roanoke	1,507	163,168.00	203,250.00	0.00
Shenendoah	7,774	898,083.00	0.00	0.00
Tennessee	6,902	879,505.00	0.00	344,000.00
York	92	6,920.80	30,200.00	75,500.00
	105,473	$13,009,213.26	$790,988.00	$2,812,739.50

Basin: Basins are major waterways such as river basins, the Chesapeake Bay, or the Atlantic Ocean.
Impacts: The linear footage of streams impacted that were compensated by use of the Fund.
Revenues: The amount of funds placed in the Fund for the Impacts.
Allocated to Projects Acquired: Funds allocated to projects already acquired.
Requested/Allocated to Projects Pending: Funds allocated or requested for projects pending acquisition.

Table 6 below provides information on the Fund's stream mitigation projects, including the basin and HUC within which the projects are located and the linear feet and type of mitigation provided for each project. Linear footages that are estimated (not based upon exact delineations) are underlined. The linear feet of mitigation are broken into commonly accepted stream mitigation categories. It is important to use this table in conjunction with the project descriptions in **Appendix II**. They provide better detail as to work accomplished, problems encountered, buffer widths, and partners. Because there is currently no agreement between DEQ and the Corps about how to assign mitigation credit for stream mitigation, the amounts and descriptions are provided and each agency can reach its own determinations in that regard. Accordingly, at this stage, it may be helpful to use the summary table above to determine impacts and then the collective information in the Mitigation Table and the project narratives to determine the scope and scale of mitigation accomplished and proposed to address impacts.

Stream mitigation is a relatively recent concept and undertaking by the Fund. To address this new workload, the Fund hired a stream restoration specialist and a protection specialist (site acquisitions) for both stream and wetland projects in 2004. Stream restoration projects are very complex in their scope of design, construction, and monitoring. The stream restoration specialist at TNC manages these tasks and by doing so, especially the monitoring, provides cost savings to the Fund that can be applied to other projects and higher environmental benefits. The Fund's wetland Restoration Specialist similarly provides a more efficient delivery of mitigation projects.

Since the Corps does not distinguish between intermittent and perennial streams at this time, Cowardin types for streams are not shown. This may change in the future once the stream mitigation policies of the regulatory agencies mature. Most impacts were reported as R3 (perennial) or R4 (intermittent). Most of the mitigation projects are on similar streams except for a significant linear footage of river bank buffer restoration and preservation.

The Fund has several large scale stream preservation projects under negotiation accounting for several million dollars in the Potomac and Rappahannock basins. These are very large projects with significant landscape scale and coverage. The also have many linear feet of streams and rivers in reasonably good to very good condition. If these projects materialize, some of the streams and their entire watersheds will be protected prior to the degradation that has befallen many of Virginia's streams.

Table 6 delineates stream mitigation types into acquired for restoration, restoration, stabilization (stabilizing unstable streams without full scale stream restoration), preservation, livestock exclusion (fencing out harmful livestock intrusion), enhancement (any number of beneficial activities including plantings or re-introduction of previously present anadromous fish), riparian/river buffer restoration, and preservation. A legend is provided to explain the elements in the table. Underlined figures have not been field delineated and were estimated based upon field visit information and/or use of GIS.

TABLE 6: STREAM MITIGATION PROJECTS

STREAM MITIGATION PROJECTS										
PROJECTS	**LOCATIONS**		**MITIGATION TYPES**							
PROJECTS	HUC	Basin	Restoration Acquired	Restoration	Stabilization	Preservation	Livestock Exclusion	Enhancement	Riparian Buffer Restoration	Riparian Buffer Preservation
Grays Island *	6010205	TN					6,000			6,000
Cheswick Park	2080206	LJ			104					
Lamb Tract	2080204	MJ		3,239					6,000	
Nash Tract	2070011	PO		950			1,600			
Linden Farm	2080103	RP					7,742		2,000	
White Oak Fish Pass	2080104	RP						13,600		
Gwathmey **	2080105	YK							2,400	2,500
Piedmont Farm 1	2080102	CB								6,613
Piedmont Farm 2	2080102	CB								1,550
Piedmont Farm 3	2080102	CB								1,430
Beldon	2080102	CB								2,205
Byrd	2080102	CB								978
Edwards	3010103	RO				5,220				
City of Bedford Tract	3010103	RO				788				
TOTALS (lf)			**0**	**4,189**	**104**	**6,008**	**15,342**	**13,600**	**10,400**	**15,276**

* For Grays Island, 6000 linear feet is the total and should not be counted twice except as to water quality benefits.
**Gwathmey project buffers will be evaluated and may not be used as mitigation.
*** Livestock Exclusion and Enhancement were not included in total linear footages in the Executive Summary table for Streams.

Projects: A list of project names.
HUC: Hydrologic Unit Codes where projects are located.
Basin: Basins are abbreviated. (LJ, Lower James; TN, Tennessee; MJ, Middle James; RP, Rappahannock; PO, Potomac, and CB, Chesapeake Bay)
Restoration Acquired: This refers to stream restoration sites that have been acquired but have not undergone construction measures yet. These sites are generally in the planning stage and are scheduled for restoration or are under construction contract negotiations or application for permits.
Restoration: These are sites where stream restoration construction measures have been completed. Monitoring for mitigation success has or will be initiated, and these areas will be evaluated over the prescribed monitoring period.
Stabilization: These projects are not full scale stream restoration projects, but have undergone stream bank or channel stabilization measures.
Preservation: This column refers to streams that have been acquired and will be preserved in perpetuity, generally with long term stewardship by TNC or others.
Livestock Exclusion: This column refers to the linear feet of stream where existing livestock were fenced out of the stream to improve water quality and stream stability.
Anadromous Fish Access (Enhancement**)**: Streams that were enhanced by re-introduction of anadromous fish or invasive species eradication measures.
Riparian Buffer Restoration: These are areas of upland buffer that required restoration from crop or cleared land to convert them to forested buffers, generally located along rivers.
Riparian Buffer Preservation: These are areas of upland buffer generally located along rivers that have been acquired and preserved.

C. TIDAL WETLANDS AND WATERS

Below are two tables that provide information about tidal aquatic resource (tidal marsh and open water areas) impact and mitigation activity associated with the Fund. More detailed project summaries are contained in Appendix III.

Table 7: 1995-2005 TIDAL IMPACTS, REVENUES, AND ALLOCATED FUNDS BY HUC

Table 7 shows basins, HUC, revenues, impacts, and allocated funds, for tidal aquatic resources through 2005. In the 1995-2005 timeframe, 54 permitted projects used the Fund as mitigation for tidal open water and tidal wetland impacts. These 54 permits resulted in 1.373 acres of tidal open water and wetland impacts over the years noted. Because tidal impacts occur within limited HUCs, they can be consolidated into one table. A legend is provided to explain the elements in the table. Underlined figures have not been field delineated and were estimated based upon field visit information and/or use of GIS (some are spread over many basins).

Revenues, Impacts, and Allocated Funds by HUC						
			Impacts			Allocated
Basin	HUCs	Revenues	EEM	EOW	Sums	Funds
Atlantic Ocean	2060010	**27,446.00**	**0.159**	**0.248**		
	Totals >	**27,446.00**	**0.159**	**0.248**	**0.407**	**206,350.00**
Chesapeake Bay	2060009	**5,175.00**	**0.075**	**0.000**		
	2080101	**3,312.00**	**0.066**	**0.000**		
	2080102	**1,000.00**	**0.001**	**0.000**		
	2080108	**44,942.01**	**0.064**	**0.184**		
	2080109	**4,153.30**	**0.000**	**0.083**		
	Totals >	**58,582.31**	**0.206**	**0.267**	**0.473**	**27,195.60**
Chowan	3010205	**2,137.50**	**0.014**	**0.000**		
	Totals >	**2,137.50**	**0.014**	**0.000**	**0.014**	**5,000.00**
Lower James	2080206	**11,768.00**	**0.050**	**0.016**		
	2080208	**59,974.21**	**0.267**	**0.036**		
	Totals >	**71,742.21**	**0.317**	**0.052**	**0.369**	**50,650.00**
Potomac	2070011	**38,934.90**	**0.060**	**0.050**		
	Totals >	**38,934.90**	**0.060**	**0.050**	**0.110**	**6,000.00**
York	2080107	**1,000.00**	**0.000**	**0.000**		
	Totals >	**1,000.00**	**0.000**	**0.000**	**0.000**	**0.00**
Consolidated Totals >		**199,842.92**	**0.756**	**0.617**	**1.373**	**295,195.60**

Basin: The watershed basin where the impacts are located or where funds were allocated.
Huc: The Hydrologic Unit Code
Revenues: Funds paid into the Trust Fund as mitigation for the impacts.
Impacts: These are acres of impacts to tidal resources, segregated into estuarine open water (EOW) and estuarine emergent (EEM) wetlands.
Allocated Funds: Funds allocated to mitigation projects to compensate for tidal impacts.

Table 8: Projects With a Tidal Mitigation Component

The Fund has seven project sites with a tidal mitigation component located within a number of watersheds. The table below provides information on the Fund's tidal mitigation projects, including the basin, HUC, acreage, and type of mitigation provided. Acreages that are estimated are underlined (generally determined by GIS measurements on aerial photographs, have not been finally delineated) may change after delineations are completed. A legend is provided below the Table.

Projects	Location		Tidal Mitigation Types									Totals
			Restoration/Creation					Preservation/Enhancement				
Projects	HUC	Basin	Acquired	Salt Marsh	SAV	Upland Buffer	Oyster Reef	Enhancement	Upland Buffer	Tidal Beach	Preservation	Totals
Dameron Marsh	**6010205**	**CB**	**0.00**	**1.48**	**0.00**	**0.00**	**0.00**	**0.00**	**7.02**	**3.71**	**5.00**	**17.21**
Trimmer	**2080206**	**CB**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.99**	**0.93**	**21.90**	**26.82**
East VA Phrag	**see below ***	**multi**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**150.00**	**0.00**	**0.00**	**0.00**	**150.00**
Eliz Oyster Reef	**2080208**	**LJ**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**
ES Oyster Reef	**2080110**	**AO**	**4.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.00**
ES SAV Rest	**2080110**	**AO**	**10.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.00**
TOTALS (lf)			**14.00**	**1.48**	**0.00**	**0.00**	**0.30**	**150.00**	**11.01**	**4.64**	**26.90**	**194.33**
Mitigation Ratios >			**0**	**1**	**5**	**10**	**5**	**50**	**15**	**20**	**50**	
Mitigation Provided>			**0.000**	**1.480**	**0.000**	**0.000**	**0.060**	**3.000**	**0.734**	**0.232**	**0.538**	**6.044**

* The Eastern Virginia Phragmites Control project involves multiple basins (see detailed description).
** Restoration to date involves primarily high marsh.

Projects: A list of project names.
HUC: Hydrologic Unit Codes where projects are located.
Basin: Basins are abbreviated. (LJ, Lower James; CB Chesapeake Bay; RP, Rappahannock)
Restoration Acquired: Tidal restoration sites that have been acquired but not constructed. They are generally being planned or scheduled for restoration or are under construction contract negotiations.
Restoration: These are sites where tidal restoration construction measures have been completed.
SAV Restoration: Submerged Aquatic Vegetation bed restoration.
Oyster Reef: Constructed oyster reef in acres.
Enhancement: Tidal Wetlands that were enhanced by invasive species eradication measures.
Upland Buffer Restored: These are acres of upland buffer that were restoration to their natural condition.
Upland Buffer Preserved: These are areas of upland buffer that are preserved in perpetuity, generally with long term stewardship by TNC or others.
Tidal Beach Shore Pres: Preserved areas of sandy tidal beach. On the Chesapeake Bay, tidal beaches often support populations of the federally endangered Northeast Beach Tiger Beetle.
Preservation: This column refers to Tidal Wetlands that will be preserved in perpetuity, generally with long term stewardship by TNC or others.

D. TRUST FUND AUDIT AND ACCOUNTING CHANGES

In 2004 and 2005, (and on an ongoing basis) the Corps and TNC conducted a thorough

audit of the data collected and recorded to track impact project information and revenues. This was done by inspecting the paper records for each payment and comparing them to the estimate and accounting spreadsheets maintained by the Corps and TNC. As a result, several modifications to the accounting process were implemented:

1. The Corps and TNC standardized their accounting spreadsheet formats so both organizations can seamlessly track and share information. The Corps and TNC also now use the same date of payment receipt. Therefore, realigning the payment dates may result in different revenue figures reported in the 2003 and 2004 reports (especially those received in the months of December or January, which may have been shifted to preceding or following years). The 2005 report does not include yearly revenue figures and has shifted to reporting by HUC as requested by DEQ. Tidal data are now reported and tracked separately, which could also create discrepancies in past (2003-2004) wetland revenue and impact data (tidal and non-tidal).

2. At times, duplicate records are discovered in the accounting spreadsheets. Duplications are eliminated whenever discovered. In addition, some past payments with paper records that were not recorded in the accounting spreadsheets have been added. Discovery of most of these changes resulted from the audit.

3. A closer audit of impact types was made and different payments were moved between resource category types. For example, some impacts reported as wetland "open water" were moved to the streams spreadsheet, based upon timing of payment, and vice versa where appropriate. These corrections may produce differences in the 2003-2004 reports, however, impacts are tracked in another manner in this report so comparisons to

Previously, tracking the relevant information for each payment (project number, name, locality, impacts, dollar amount, HUC, basin, dates, and etc.) proved difficult when applicants failed to provide this information. There was no timely or efficient procedure in place to deal with payments that lacked sufficient or contained erroneous information, and compiling data for purposes such as this report was very time consuming. To remedy this problem, TNC and the Corps initiated a payment voucher system in early 2004, to ensure that accurate information is supplied with each payment. Payments lacking vouchers are returned to applicants. This has significantly improved both organizations' accounting efficiency and accuracy and will greatly aid in streamlining the end of year accounting necessary to produce these reports. Adoption of payment vouchers has aided greatly in prevention of accounting problems such as duplicate or missing information.

Additional audits of other accounting categories are and will continue to be accomplished on an ongoing basis.

E. OTHER REVENUES and ALLOCATION TIMEFRAMES

The Trust Fund earns interest on the balance of funds held in its account. Through the end of 2005, the Fund earned a cumulative amount of **~$1.2** million in interest payments. Interest revenues are not generated from direct wetland impacts and therefore are not associated with specific mitigation liability. Trust Fund accounts are considered fungible accounts so all funds from all sources are considered as one lump sum or "large pot". Therefore, rather than attempting to tie each of the hundreds of impact project payments to each of the hundreds of project expenditure allocations and expenditures (all at different levels that do not cleanly match and change daily), the Corps reviews each mitigation proposal on its merits and by whether it

provides suitable compensation for the impact cost (in acres or linear feet of aquatic resource) from the fungible pot. Interest funds can be considered to be used for direct mitigation proposals, Trust Fund staff expenses, or proposals that are not strictly considered "in kind" mitigation, or other suitable uses. Primarily, interest funds contribute to greater environmental benefits by multiplying the funds available for mitigation projects. For purposes of contrast, many of the wetland preservation acres acquired by the Fund (~**1,874** acres to date) have been purchased with funds amounting to less than the Fund's total interest earnings (~$1.2 million).

The MOU provides timeframes for TNC to allocate funds to mitigation projects. Generally funds should be allocated within 3 years or the Corps may direct that those funds and the associated mitigation liability be transferred to another party, unless the timeframe is extended by the Corps. Historically, TNC has allocated funds within 3 years. Among the factors the Corps considers regarding decisions on whether to grant extensions or re-direct funds, the following questions are taken into account:

1. Is TNC in active negotiations for projects that re-direction of funds would frustrate?

2. Does another mitigation alternative exist that would provide more favorable benefits to the aquatic environment?

3. What efforts has TNC made to actively seek new projects?

F. MONITORING AND STEWARDSHIP

Monitoring of mitigation projects is critical to the determination of overall mitigation success. Trust Fund wetland restoration projects are generally monitored for shallow groundwater hydrology using automatic reading wells that record depth to water table on a daily basis. This equipment provides the highest quality data and eliminates the subjectivity present in manually read wells, where the recommended interval between readings is weekly during the growing season and monthly during the non-growing season. Automatic reading wells also provide robust data sets that aid in analyzing and comparing daily precipitation data for normal circumstances determinations. Lastly, these data may provide a basis from which the study of wetland hydrology can be advanced. Well plans and locations are reviewed by the Corps. Hydrology monitoring is generally conducted for five to ten years, with reduced numbers of well stations left in place for extended durations of time to provide long term monitoring information to better understand the hydrologic evolution of restoration sites.

The Trust Fund implements a number of different vegetative restoration strategies including bare-root seedling installation, weed mats, tree shelters, invasive species control, installation of aggressive canopy closers (e.g. sycamore or black willow), and no-plant alternatives. These different re-vegetation strategies require differing sampling methods and frequencies. The Trust Fund employs standard, accepted sampling methodologies for assessing vegetation at restoration sites. These include quantitative methods (e.g. plot/transect methods) and qualitative (e.g. professional observations) depending upon the objective. Use of 1987 manual data sheet methods is also an option for vegetation monitoring that may be used more frequently in the future.

Soils are typically mapped as hydric versus non-hydric in the early stages of project development. If non-hydric areas are significantly hydrated as a result of restoration activities, they will be monitored to determine if they become reduced. Generally the guidelines outlined

in the "US Army Corps of Engineers 1987 Wetland Delineation Manual" or in "Field Indicators of Hydric Soils in the Mid-Atlantic United States", are used for identification of hydric soils or hydric soil indicators.

The vast majority of Trust Fund mitigation sites are either under the long-term stewardship of the Conservancy or some other qualified natural resource entity (e.g. DCR, USFWS, VOF) either through ownership or through a conservation easement. Stewardship is an important aspect of any mitigation project, and The Nature Conservancy is uniquely qualified to address the challenges of successful long-term management. Such challenges include access, trespass, vandalism, invasive species control, pest and vector management, and local landowner appeasement and education. Frequent site visits by wetland professionals and the use of volunteers to aid in certain aspects of monitoring provide beneficial information regarding the progression and condition of Trust Fund sites.

Although the Fund does not fund academic research studies, its sites are made available for scientific research studies as long as the studies do not interfere with mitigation efforts. Two such studies have been conducted at Trust Fund sites in Chesapeake, including one review of soil temperature and growing season supervised by Dr. Gallbraith of Virginia Tech, and one small mammal study supervised by Dr. Rose of Old Dominion University.

G. PARTNERS

Many of the projects described here in involve partners working with TNC. Partnering has produced varied levels of success. Receipt of monitoring reports is one of the areas where success has been less than optimal. Future partner projects will require clearly defined contractual documentation of each partner's roles and obligations. Overall, partners provide a significantly positive multiplier to allow for accomplishment of more mitigation projects.

H. ADDITIONAL BENEFITS OF TRUST FUND PROJECTS

In addition to the many acres and linear feet of wetland and stream mitigation, Trust Fund mitigation projects often provide unique functions and values to Virginia's aquatic environment not provided by banks or project specific sites. First, the large size of many of the projects provides habitat for wildlife species that depend upon large contiguous forest blocks not provided by smaller sites. Second, a benefit of the partnership with TNC is that many of these sites are included as part of a planned and researched conservation format with broad landscape and regional application. Third, many of these projects provide corridors to connect preserved habitat blocks to other habitat blocks. Finally, several projects have a historic resource component and many have rare or threatened species or community components.

I. CONCLUSION

The Fund provides significant staff time savings for the Corps and DEQ. The field and office reviews required for approval of the over 600 project specific mitigation proposals, which would be needed for all of the projects that have utilized the Fund, would have required substantial amounts of staff time by both agencies. The availability of the Trust Fund as a mitigation option allows this time to be used for other tasks such as timelier permit responses for

the regulated public or compliance inspections.

Although more work needs to be done and outstanding impacts must be addressed, the mitigation projects described above demonstrate that the Fund has made significant progress toward accomplishing its goal of providing watershed-based mitigation for permitted impacts, along with benefiting Virginia's natural heritage. By combining the mitigation contributions from multiple permit applicants to accomplish projects at favorable economies of scale, working in the non-profit environment, and with partners, the Fund is in an advantageous position to bring significant mitigation projects to completion.

For additional information, please contact Mr. Greg Culpepper of the Norfolk District Corps of Engineers at 757-201-7655 or by email at [Gregory.D.Culpepper@usace.army.mil].

Appendix I: Non Tidal Wetlands

A. NON TIDAL IMPACT AND MITIGATION TABLES

1. Tables of Revenues, Impacts, and Allocations by HUC

Below in this section are tables that contain figures for each of Virginia's 14 river (or estuary) basins. These tables detail the following information for non-tidal wetlands:

Basin: Basins are in the Title Block of the table.
HUC: Hydrologic Unit Codes
Revenues: The amount of funds placed in the Fund for the Impacts.
Dollars Allocated: The amount of funds committed to mitigation projects.
Impacts: The acreage of wetlands impacted that was compensated by use of the Fund.
Type: The Cowardin types used are abbreviated and listed as PFO, referring to Palustrine forested wetlands (2:1); PSS, referring to Palustrine scrub shrub wetlands (1.5:1); PEM, referring to Palustrine emergent wetlands (1:1); and POW referring to Palustrine open water impacts (1:1).
Ratio: The ratio for each impact type is used to calculate the mitigation liability (impacts * ratio) in acres.
Mitigation Liability: The acreage of mitigation required based on wetland impact classification and standard ratios.

2. Tables of Mitigation Projects by HUC

A second table is provided that outlines the mitigation projects for each basin and HUC. These tables detail the acreage of each type of mitigation provided and the mitigation credit provided based upon normally accepted ratios (Upland buffers and preservation may not receive full credit without at least a 1:1 ratio of wetland restoration. Future discussions will determine final crediting). This information is provided for each hydrologic unit code (HUC) within each of the basins. Underlined acreages have not been confirmed by final delineations, but are to be confirmed as soon as practicable. The following legend explains each entry:

Basin: Basins are in the Title Block of the table.
HUC: Hydrologic Unit Codes
Project (Name): The name given to a particular project.
Status: The status of each project using these codes:
- **C -Constructed:** Wetland restoration work, such as earthwork and planting, have been completed. Generally projects in this phase are undergoing monitoring.
- **Cl -Closed:** No additional work is required, except for long term stewardship.
- **D -Requires a Delineation:** Final wetland flagging and locating the flags to produce a delineation map must be accomplished.
- **M -Undergoing Monitoring:** This is standard monitoring to ensure wetland criteria is met.
- **O -Ongoing:** The actual mitigation work is on-going, and may continue for some time.
- **P – Planning:** Project is in planning and development stage.
- **R -Remediation:** The project has some type of problem, and remediation work is required. This may be vegetation mortality, invasive species, water levels too high or low, or etc.

Non-Tidal Wetland (Mitigation Types):
- **Estab(lishment):** Primarily wetland restoration acres, possibly limited wetland creation acres.
- **Pres(ervation):** Non-Tidal wetland acres preserved.
- **Enhance(ment):** Acres where hydrology or vegetation was improved, or invasive species treated.
- **Acquired:** Restoration acres acquired and in planning and development stage.

Upland Buffer (Mitigation Types)
- **Rest(oration):** Upland acres that required restoration back to forested natural buffers.
- **Pres(ervation):** Upland acres of natural vegetated buffer that were preserved.

Tot(al) Non-Tidal Acres: Acres of all mitigation types combined.
Cost in Impacts: (Funds Allocated / Revenues per acre impacted) This is the number of impacted wetland acres that correspond to the Funds Allocated to each project. (for example, 2 acres of impacts resulted in $110,400 of Allocated Funds; the Cost in Impacts is 2 acres).
Crediting Ratio: These are standard ratios for mitigation at banks or project specific mitigation sites. Because the impact liability has already been subjected to ratios based on Cowardin type, and most of the impacts are PFO, the preservation, enhancement, and upland buffer establishment ratios are shown as 5 to 1. However, since the impacts for PFO acres are already multiplied at a 2:1 ratio the actual yield per acre of impacts for these mitigation types compared to the mitigation liability is 10:1 (Impacted acre *2 *5 = 10:1). For upland buffer preservation, the mitigation yield for PFO impacts would be 15:1.
Surplus or (Deficit): The difference in credits vs mitigation liability.

1. ATLANTIC OCEAN

A. Table of Revenues, Impacts, and Allocations by HUC.

ATLANTIC OCEAN						
HUC	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080110	4,466.00	0.00	0.000	PFO	2	0.000
			0.000	PSS	1.5	0.000
			0.087	PEM	1	0.087
2060010	1,313.20	0.00	0.000	PFO	2	0.000
			0.000	POW	1	0.000
			0.026	PEM	1	0.026
TOTALS	5,779.20	0.00	0.113			0.113

B. Table of Mitigation Projects by HUC. The Fund has no mitigation projects providing non-tidal wetland mitigation to these HUCs.

ATLANTIC OCEAN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					0.11					
Total Mitigation Liability (with ratios)					0.11					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(0.11)

C. Additional Project Information

The Fund is evaluating potential for one tidal and non tidal project on the Eastern Shore but has not allocated funds for it. In this basin and reflected in the tidal section, the Fund has allocated money for a 10 acre Submerged Aquatic Vegetation restoration.

2. CHESAPEAKE BAY BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

CHESAPEAKE BAY BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080101	252,870.70	0.00	1.566	PFO	2	3.132
			0.020	POW	1	0.020
2080102	225,615.90	599,362.00	1.788	PFO	2	3.576
2080108	1,172,168.25		9.295	PFO	2	18.590
			0.361	PEM	1	0.361
			2.300	POW	1	2.300
2080109	21,004.00		0.163	PFO	2	0.326
			0.004	PEM	1	0.004
TOTALS	1,650,654.85	599,362.00	15.330			27.979

B. Table of Mitigation Projects by HUC. The Fund has 8 mitigation projects providing non-tidal wetland mitigation to this basin.

CHESAPEAKE BAY BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
2080102	Dameron	C,M,D	15.88	13.72			21.33	0.21	51.14	1.04
	Trimmer	D		7.20				1.26	8.46	0.02
	Byrd	Cl		2.64				32.62	35.26	0.79
	Belden	Cl		2.11				23.75	25.86	0.79
	Piedmont Farms 1	Cl		59.53				41.33	100.86	1.81
	Piedmont Farms 2	Cl		37.10				16.28	53.38	0.86
	Piedmont Farms 3	Cl		3.49				0.21	3.70	0.11
	Phrag DCR	O,M			210				0.00	
Total Acres>			15.88	112.07	210	0	21.33	115.66	278.66	5.43
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			15.88	22.41	42.00	0.00	8.53	15.42		
Total Acres of Impacts					15.33					
Total Mitigation Liability (with ratios)					27.98					
Total Credits to offset Mitigation Liability:					104.25	Surplus or (Deficit) >				76.27

C. Additional Project Specific Information

Future Projects: The Fund has allocated funds to acquire a 628.3 acre parcel at the south end of this basin that will consist primarily of preservation. It is also seeking restoration sites along the west bank of the Chesapeake Bay.

Dameron Marsh Natural Area Preserve: Dameron Marsh Natural Area Preserve (NAP) is located at the eastern terminus of State Route 693 in Northumberland County, Virginia. The Chesapeake Bay and Cloverdale Creek border the site to the south and southwest, and Ingram Bay and Mill Creek border the

site to the northeast and north. The site consisted of approximately 64.64 acres (out of a larger tract ~330 acres) including agricultural fields, wetlands, uplands, and tidal areas. Hydrology monitoring appears favorable as is vegetative establishment. Parts of the site provide habitat for northeast beach tiger beetles (federal endangered), along with use by bald eagles. Site fronts on the Chesapeake Bay, and restoration eliminated direct farm chemical inputs into the Bay. Allocated funds originally approved in 1997. Perpetual protection as a Virginia Natural area preserve.

Trimmer Tract: This site is a tidal/non-tidal wetland area in Mathews County. A delineation is required and will be completed in 2006 and credit will be assigned once this is completed.

Byrd and Beldon Tracts: These two tracts are primarily forested lands with wetland and stream resources. The acquisition costs from these projects will be reimbursed to the Fund and those funds will be recycled back into additional mitigation projects. These projects reflect the leverage possibly by sale of non-mitigation portions of sites to conservation buyers. Protection is by TNC ownership and subject to the MOU. Beldon contains an additional 20.25 acres of upland buffer preserved that were not included in the non-tidal figures so they could be included as stream buffer acres in the stream section below. Byrd contains an additional 6.74 acres of upland buffer preserved that were not included in the non-tidal figures so they could be included as stream buffer acres in the stream section below.

Piedmont Farms Tracts: These three tracts are located on Dragon Run and also involve small tributaries. They were acquired in three separate purchases by adjoin to create one larger tract of land. They provide one side frontage on the Dragon and Piedmont Farms 1 contains a significant archaeological resource that is likely a Native American site. There are wide wetland buffers off of the Dragon's mainstem, along with upland areas landward of the wetlands. "The Dragon (Run) wilderness is a unique ecosystem which has been ranked second in ecological significance among 232 areas investigated in a Smithsonian Institution study which covered 12,600 square miles of the Chesapeake Bay region." (source: Friends of Dragon Run). These sites are under TNC ownership and subject to the protection provision of the MOU. There is potential for sale to a conservation buyer. Allocations were approved in July of 2003 through April of 2005. Piedmont Farms 1 contains an additional 30.36 acres of upland buffer preserved that were not included in the non-tidal figures so they could be included as stream buffer acres in the stream section below. Piedmont Farms 2 contains an additional 7.12 acres of upland buffer preserved that were not included in the non-tidal figures so they could be included as stream buffer acres in the stream section below.

Eastern Virginia Phragmites Control Project: Recognizing the need for control of the invasive grass *Phragmites australis* which readily invades coastal wetlands and can reduce plant diversity within sensitive natural areas, the DCR Dept. of Natural Heritage (Natural Heritage) along with USFWS representatives in Rappahannock River basin and TNC staff identified properties they manage in the greatest need of control. An initial grant provided by the National Fish and Wildlife Foundation supported Phragmites treatment efforts on several Natural Heritage and TNC preserves; however, to combat such a large problem repeated treatments were needed. In August 2002 Natural Heritage served as the lead in requesting initial funding to treat approximately 300 acres which was authorized by USACE. According to the first year report submitted by Natural Heritage a total of 363 acres were actually treated with glyphosate on 5 State Natural Area Preserves, 4 State Parks, and 2 TNC Preserves. Essentially, Natural Heritage reported that their monitoring indicated that above ground mortality of Phragmites due to the herbicide was high. They did note that there was evidence of rhizome vigor particularly in areas in which this was a first treatment and repeated treatments would be needed. A second funding request was submitted by Natural Heritage and authorized by USACE in September 2003 to treat approximately 360 acres. Because hurricane Isabel resulted in salt die-back effects on the Phragmites at the sites 200 acres were not treated. However, 195 acres of Phragmites was treated along the Rappahannock River including some re-treatment areas from the Rappahannock River Phragmites project. Natural Heritage conducted monitoring of the areas treated in 2002 to document the hurricane effects and to obtain valid pretreatment data. Results indicated that despite the initial high mortality of aboveground stems, the Phragmites increased in cover in those areas that were not re-treated as a result of the hurricane. Residual effects of the control efforts, however, were evident and Natural Heritage indicated that future control efforts would yield a high degree of control. A third funding request was

submitted by Natural Heritage and authorized in by USACE August 2004 to treat approximately 376 acres. Treatment with Glyphosate and a newer product called Habitat© was conducted in August of 2005. Initial observations indicate that re-treated areas are responding favorably and that the newer product Habitat© has worked extremely well. According to the Treatment Summary maintained by TNC and including Natural Heritage activities approximately 76 acres that were treated as part of this adaptive, multi-year control project are being managed by Natural Heritage without aerial application, thus, achieving the goals of the project. The Nature Conservancy anticipates a funding request to continue treating the other acres associated with this project is forthcoming and will be subject to USACE approval. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits.

3. CHOWAN RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

CHOWAN BASIN						
HUC	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
3010201	191,652.00	0.00	0.880	PFO	2	1.760
			2.950	PSS	1.5	4.425
			1.570	PEM	1	1.570
3010202	209,841.96	0.00	4.640	PFO	2	9.280
			3.520	PEM	1	3.520
			0.060	POW	1	0.060
3010204	22,680.50	0.00	0.216	PFO	2	0.432
			0.000	PEM	1	0.000
			0.000	POW	1	0.000
3010205	627,533.00	1,401,351.00	19.048	PFO	2	38.096
			0.190	PSS	1.5	0.285
			0.240	PEM	1	0.240
TOTALS	1,051,707.46	1,401,351.00	33.314			59.668

B. Table of Mitigation Projects by HUC. The Fund has 11 mitigation projects providing non-tidal wetland mitigation to this basin. (*Benefits established acres were re-hydrated forested areas so the ratio was doubled consistent with normal mitigation ratios)

CHOWAN BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
3010205	**Kellam Rigato**	D		125.34				25.72	151.06	1.48
	Tidewater Christian	Cl		51.80				2.40	54.20	0.97
	Mayo	Cl		9.45				3.75	13.20	0.35
	Hall	C,M	25.00				2.00	3.80	30.80	4.00
	Benefits *	D	11.96	745.98	15.02			25.10	783.04	12.47
	Bruff	C,M	3.07				6.93		10.00	0.78
	Su	C,M	49.00	73.28			11.00		133.28	13.83
	Knight	C,M	4.05				13.95		18.00	2.61
	Fentress	C,M	19.79				3.00		22.79	1.83
	Stephens	C,M	51.00	112.10			20.00		183.10	0.00
	Powers	C,M,D	25.75	97.10				49.42	172.27	13.33
Total Acres>			**201.58**	**1089.71**	**15.02**	**0**	**56.88**	**110.19**	**1,571.74**	**51.66**
Crediting Ratio >			**1**	**5**	**5**	**1**	**2.5**	**7.5**		
Mitigation Credit Against Liability >			**201.58**	**217.94**	**3.00**	**0.00**	**22.75**	**14.69**		
Total Acres of Impacts					**33.31**					
Total Mitigation Liability (with ratios)					**59.67**					
Total Credits to offset Mitigation Liability:					**459.97**	**Surplus or (Deficit) >**				**400.30**

C. Additional Project Specific Information

Northwest River Kellam Rigato Tract: The Kellam Rigato tract is located on the Northwest River just east of Rt 168 approximately 1 mile north of the VA – NC state line. The tract was acquired in December of 1995. This tract is primarily forested wetland. The land adjacent to this site had been timbered indicating a threat that this tract could be deforested as well. This site added to the Conservancy's Northwest River Preserve. The Conservancy used National Wetlands Inventory mapping (mapped as PFO1R) and on-site investigation to estimate/confirm wetland presence, but must conduct a delineation in the near future. The Conservancy will conduct this delineation during 2006 and request USACE confirmation after which the project may be closed. No monitoring beyond that associated with normal stewardship of the site is required. Protection is in the form of TNC ownership and governed by the MOU.

North Landing River Tidewater Christian and Mayo Tracts: The Nature Conservancy acquired the Tidewater Christian Tract in 1997 and Mayo Tract in 1998. The properties are located off of Pocaty Creek, a tributary of North Landing River in Chesapeake, Virginia and may be accessed by Pocaty Road. Both properties were identified by The Nature Conservancy as high priority wetland preservation areas. The majority of both tracts are in the floodplain of Pocaty Creek (below 5 ft. MSL) and the forested wetlands are largely dominated by Water tupelo gum (*Nyssa aquatica* L.) with many Bald cypress (*Taxodium distichum* L.). These are unique wetland resources because they are affected by seasonal wind tides. An inventory by the Department of Conservation and Recreation – Division of Natural Heritage that was conducted in the 1990's found the wetlands of the North Landing and Northwest River systems to be the most biologically diverse sites in Virginia east of the Blue Ridge Mountains. A delineation of surface waters was conducted by TNC and approved by USACE in 2003. The predominant wetland type on both properties is Palustrine Forested Broad-leaved Deciduous Seasonal Tidal wetlands (Cowardin classification of PFO1R). These projects extend the Conservancy's North Landing River preserve up Pocaty Creek toward a 250-acre NRCS wetland restoration project providing a critical wildlife corridor. No monitoring beyond that associated with normal stewardship of the sites is required. Protection is by TNC ownership and as per the MOU.

Northwest River Hall Tract: The Hall Tract is 31-acres in size and is located adjacent to the Benefits tract in southern Chesapeake. The Hall tract was acquired by TNC in 1999 and in contrast to the relatively undisturbed, forested wetland condition of Benefits tract the majority of the Hall tract was

actively drained and maintained as farmland. Approximately 27 acres of cropland and 4 acres of adjacent forest were drained by a complex of 9 lateral field ditches that led to a major collector ditch representing an opportunity for wetland restoration. The objectives of this project are to restore up to 25 acres of primarily forested wetland (PFO1) and restore/enhance 6 acres of upland buffer. Based upon a restoration plan developed by TNC and a consultant and approved by USACE the following activities were completed in 2001: all the lateral field ditches at this site were filled, several deeper borrow areas were created, and a containment berm separating the fields from the collector ditch (which could not be plugged) was constructed. The fields on the site were planted with 6,000 various hardwood wetland trees and particular rows were marked for monitoring. A total of 10 automatic recording shallow groundwater monitoring wells were installed in the fields and forest in 2001 to monitor the hydrological restoration. A student from Va Tech had installed an additional two automatic recording wells (total of 12) all of which were set to read 4 times daily and monitored by VA Tech for the first 2 years. Planted seedling survival was measured along transects on planting rows, and other vegetation monitoring (estimates of colonizing seedling density and estimates of herbaceous cover) was conducted within vegetation plots. Monitoring results for the first four years of shallow groundwater monitoring demonstrate that all wells have exceeded the hydrology criteria (12.5%) for most years and displayed hydrographs that are "typical" of mineral flat wetlands with water tables at or near the surface in the fall and early spring but dropping well below the surface by the middle of the growing season after leaf out. Across the majority of the site planted seedling survival in combination with naturally colonizing seedlings exceeds the 400 stems/acre that is often used as a minimum threshold and are composed primarily of wetland species. Based upon soil sampling conducted prior to the wetland restoration activities, there is a slight ridge of approximately 5 acres that did not exhibit hydric soils criteria, but where hydrology wells indicate wetland hydrology is present. Thus, the soils in this area must be evaluated during a final site delineation to confirm/determine the extent to which the restored hydrology of the site fostered development of hydric soil indicators. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Davis Environmental Consultants organized the tree planting for this site with volunteers organized by TNC.

Northwest River Benefits Tract: The Benefits tract is located in southern Chesapeake on a tributary to the Northwest River. The Conservancy acquired this tract in 3 separate transactions in 1998 - 1999, but total they contain some 886 (783 from the Fund) acres of predominantly forested wetlands. This tract represents one of the last large, contiguous forest blocks that can be protected in an area that was historically called the "Green Sea" due to its vast unbroken complex of forest swamps and marshes. The wetland upland complex provides interior forest habitat that may be utilized by neo-tropical migratory bird species and unique wildlife such as Canebrake Rattlesnakes (*Croatalus horridus ssp. atricaudatus*), American Black Bears (*Ursus americanus*) and Least Trillium (*Trillium pusillum* var. *virginianum*) are known to inhabit this site. Furthermore Benefits tract was the anchor for the acquisition of two adjacent properties (Hall and Su tracts) both of which involve significant wetland restoration acres. The Conservancy used National Wetlands Inventory mapping (mapped as a variety of wetland types) and on-site investigation to estimate/confirm wetland presence, but must conduct a delineation of surface waters and wetlands to determine the jurisdictional wetland acres and upland acres preserved by this acquisition that can be utilized as mitigation. The Conservancy will conduct this delineation during 2006 and request that the USACE provide a confirmation. Restoration or wetland establishment activities involved a large ditch and road complex that existed on the site. The Conservancy in coordination with a consultant and USACE determined that an area of approximately 11.96 acres were drained by the ditch and may be restored to jurisdictional wetlands. The ditch was plugged in six locations in summer of 2000 initiating restoration of the forested wetland area immediately adjacent to the ditch. Six automatic recording shallow groundwater monitoring wells were installed in 2000 to monitor the hydrological restoration, which based upon the results to date has been very successful. This project will be considered closed out after USACE determines the success of the activities and the resulting credits.

Great Dismal Swamp Bruff Tract: The Bruff tract is located on the Dismal Swamp scarp within ¼ mile south of the Great Dismal Swamp National Wildlife Refuge office off of Desert Road in Suffolk, VA. The property was acquired by TNC in January of 1998 and was one of the earliest purchases of this program for wetland mitigation. The property consists of 10 acres of farmland. This project represents a cooperative effort between the USACE, TNC and USFWS, who will ultimately own the site and manage

it with the rest of the refuge, pending approval and release of the project by USACE. This site was included in a study conducted by a graduate student from Virginia Tech, the results of which have produced a master's thesis and a journal article related to soil science and wetland growing season. Finally, technicians from Virginia Institute of Marine Science monitored shallow groundwater wells at this site to help support the development of the Hydrogeomorphic Model for deciduous hardwood flat wetlands.

The Bruff site was bisected by a ditch which drained both mixed pine hardwood wetlands and uplands to the north and agricultural fields to the south. Initial planning identified as much as 5 acres that could be restored by eliminating the drainage from this ditch. Water control structures were installed in the collector ditch in 1999(?), several lateral ditches in the fields were plugged, and the fields were planted to native wetland hardwoods. VA Tech and VIMS installed and maintained 12 automatic recording shallow groundwater wells both in the agricultural fields and in the forest and USFWS conducted vegetation monitoring of the planted seedlings. Due to the number of collaborators on this project, much of the monitoring data for this site are in a variety of formats maintained by these partners. This project will require consolidation of the data and comparison to general monitoring standards for non-tidal wetland restoration. Several key decisions have been supported using the information that was collected by the various partners. The scope of the wetland restoration portion of the project should be reduced to ~3 acres as hydrological restoration of certain areas appears to be impractical based upon several years of data. The site was naturally colonized by a large number of loblolly pines which were overcrowding the planted and naturally colonizing hardwood seedlings; therefore, the USFWS sponsored a thinning of the pine during the winter of 2005 in the effort to release the remaining hardwoods from competition. The Conservancy will continue to work with Va Tech and USFWS to collect hydrology and vegetation data. Furthermore TNC will compile the various data that exist into a report by mid 2006 that can be used document the status of the restoration efforts at the site. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership that will transfer to FWS as part of the Refuge.

Northwest River Su Tract: The Su Tract is 133-acres in size and is located adjacent to the Benefits and Hall tracts in southern Chesapeake. The Su tract was acquired by TNC in 2000 and contains approximately 73 acres of forest (including forested wetlands) and 60 acres of cropland. This site contributes to a corridor from Benefits/Hall through the Davis/Tseng mitigation bank, to the Northwest River. Virginia Least Trillium (*Trillium pusillum* var. *virginianum*) and Canebrake rattlesnake have been observed on this site. The objectives of this project are to restore up to 56 acres of primarily forested wetland (PFO1) and restore 4 acres of upland buffer, while preserving upland and forested wetland. The Conservancy used National Wetlands Inventory mapping (mapped as a variety of wetland types) and on-site investigation to estimate/confirm wetland presence, but must conduct a delineation of surface waters and wetlands to determine the jurisdictional wetland acres and upland acres preserved by this acquisition that can be utilized as mitigation. The Conservancy will conduct this delineation during 2006 and request that the USACE provide a confirmation. Wetland and habitat restoration efforts began in 2001 and included plugging of field ditches, creation of several seasonally flooded ponds, construction of a berm system, and planting of 15,000 bare root seedlings in the agricultural fields. Additionally several ditches were plugged within the forested area of this site providing for wetland restoration and enhancement. Hydrological monitoring results for the first three years indicate that the majority of the restoration area of the site (estimated at 49 acres) is saturated to a depth and duration during the growing season so as to support the wetland hydrology requirements of the US Army Corps of Engineers. Seedling densities including planted and volunteer species differ depending upon hydroperiod with higher densities (~ 440 stems/acre) occurring in drier areas of the site and lower densities (~ 100 stems/acre) in wetter areas of the site. Visual observations of the vegetation development on the site through 2005 indicated that Loblolly pine is colonizing in large numbers particularly in the drier areas of the site, which comprises roughly 5 acres. However, the majority of other colonizing woody species that we anticipate will be present in the dominant stratum of the site are designated wetland plants according to the National List of Plant Species that Occur in Wetlands: Northeast (Region I). Furthermore, given the favorable hydrological monitoring thus far, we expect the greater part of this site will continue to meet wetland criteria. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the

activities and the resulting credits. Protection is by TNC ownership and as per the MOU. This site was suggested to the Fund by Davis Environmental Consultants who also assisted in the negotiations for acquisition of the site.

Back Bay Knight Tract: The Knight property is located on Princess Anne Road in the City of Virginia Beach, Virginia approximately ¼ mile northeast of the community of Back Bay. The 18-acre property consisted of eleven agricultural fields separated by ditches that were primarily in soybean production. The site was acquired in 2000 and was considered an important acquisition within the Back Bay sub-watershed, which is quickly developing. The objective of this project is to restore the pre-ditched hydrologic regime and wetland vegetative structure of the Knight tract to a jurisdictional forested wetland. In early 2001 interior field ditches were plugged, but the field crowns were not leveled, and a perimeter berm system with a water control structure to retain surface water and to prevent flooding an adjacent property was installed, limited grading to provide fill material for ditches and berms was completed, and 4,500 seedlings of various wetland hardwoods were planted. Five automatic recording shallow groundwater monitoring wells were installed in 2002 (on various hydrologic settings such as crowns and middle ground areas) and monitored annually and vegetation monitoring was conducted in 2003 and 2005. Based upon well data collected thus far there are portions of the site that fail to meet the USACE hydrology criteria in most years, primarily those areas that are adjacent to perimeter ditches or located at field crowns both areas which tend to support non-hydrophytic herbaceous vegetation as well. There is obvious wetland development in the vicinity of interior ditches that were plugged and are at slightly lower elevations than field crowns as evidenced by prolonged standing water and the presence of a dominance of hydrophytes. Survival of planted seedlings is high and growth is good; however, seedling density is below the recommended 400 stems per acre in most areas even when colonizing seedlings are considered. The Corps is evaluating whether is will require remediation by re-grading the field crowns. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project will be considered closed out when USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership and as per the MOU.

Back Bay Fentress Tract: The Fentress property is located on Princess Anne Road in the City of Virginia Beach, Virginia approximately ¼ mile northeast of the community of Back Bay. The Fentress property contains 22.79 acres of converted cropland that was purchased in 2001. The Fentress property is directly adjacent to the Knight Tract, which was acquired previously by TNC for wetland restoration.
The objectives of the Fentress project are to restore 22 acres of forested wetland and an acre of upland buffer. The wetland restoration plan emphasized grading of field crowns (lesson learned) and complete filling of interior field ditches in order to prevent the drainage effects that were being observed at the Knight tract. In 2003 the site was rough leveled, a perimeter berm was constructed, and the berm between the Fentress and Knight projects was breached in several locations to allow for hydrologic connectivity. In early 2004 the site was planted with 5,500 bare root seedlings of seven wetland hardwood species. Approximately 20% of the seedlings (1,100) were installed utilizing tree shelters and weed mats to improve survival. Five automatic recording shallow groundwater monitoring wells were installed prior to the 2004 growing season. Vegetation was monitored in 2005 and initial review of the information suggests that while the site is dominated in large part by hydrophytic vegetation, planted seedling survival is low and colonization by other woody species is similarly low. There are several areas greater than 2 acres in area where seedlings appear to have drowned due to the effects of the hydrological restoration. The Nature Conservancy proposes to conduct a site assessment in 2006 with USACE to determine what remediation is necessary. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed until USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership and as per the MOU**.**

Northwest River Stephens: The Stephens property (detailed under the Lower James River Basin) is also included as part of Chowan Basin due to the split drainage.

Northwest River Powers Tract: The Powers tract is located in Chesapeake, Virginia off of Ballahack

Road, less than one mile west of the Rt. 168 Northwest River crossing. The property is 172.27 acres with 25.75 acres of prior-converted farmland and the balance is a mix of bottomland hardwood wetland and mixed upland forest with frontage on Dolley Creek, a tributary of the Northwest River. The tract was identified by The Nature Conservancy as a priority tract for protection within the Northwest River corridor and was acquired in 2003. A closely spaced ditch network drained the agricultural fields on the site and a USACE jurisdictional determination in August 2004 confirmed that the 25 acres of agricultural land were prior converted wetlands. A delineation of surface waters and wetlands on the forested portion of this property should be confirmed in 2006.

The goal of this project is to restore the pre-ditched hydrologic regime and wetland vegetative structure of 20.75 acres of former agricultural fields to forested wetlands and 4.5 acres to scrub-shrub wetlands that will be maintained within a power line right-of-way. In late 2004 the ditches in the agricultural fields were filled, the fields were graded to remove field crown effects and a perimeter berm was installed to prevent flooding adjacent properties. In early 2005 the restoration site was planted with over 6,300 and 2,800 bare root tree and shrub seedlings respectively. Five automatic recording shallow groundwater wells were installed in 2005 in representative locations. All wells exceeded the hydrology criteria (12.5%) for the 2005 growing season. Vegetation monitoring is scheduled to occur in 2006, but initial site observations suggest that while there is observed mortality of planted seedlings, natural colonization is contributing native wetland species to the site, especially those fields closest to the existing tree line. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership and per the MOU.

Northwest River Cavalier Tract: In partnership with Virginia Dept of Game and Inland Fisheries, the Corps approved funds for acquisition and restoration of 150 acres within a larger 3000+ acre conservation project. The Corps will require a well study to determine the extent of drained areas suitable for restoration of wetlands and the remainder will be preserved. Protection will be in the form of a state wildlife management area.

4. UPPER JAMES RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

UPPER JAMES BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080201	30,665.82	0.00	0.183	PFO	2	0.366
			0.173	PSS	1.5	0.260
			0.165	PEM	1	0.165
			0.065	POW	1	0.065
2080202	103,030.86		1.698	PFO	2	3.396
			0.006	PSS	1.5	0.009
			0.653	PEM	1	0.653
			0.000	POW	1	0.000
TOTALS	133,696.68	0.00	2.943			4.914

B. Table of Mitigation Projects by HUC. The Fund has no mitigation projects providing non-tidal wetland mitigation to this basin.

UPPER JAMES BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
									0.00	0.00
									0.00	
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					2.94					
Total Mitigation Liability (with ratios)					4.91					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(4.91)

C. Additional Project Specific Information

Future Projects: The Fund is evaluating a wetland restoration proposal in this basin on the Cowpasture River that will address most of the impact liability.

5. MIDDLE JAMES RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

MIDDLE JAMES BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080203	151,519.20	0.00	0.823	PFO	2	1.646
			0.750	PSS	1.5	1.125
			0.289	PEM	1	0.289
			0.000	POW	1	0.000
2080204	424,495.80	366,450.00	3.290	PFO	2	6.580
			1.000	PSS	1.5	1.500
			0.621	PEM	1	0.621
			0.000	POW	1	0.000
2080205	299,401.00		2.510	PFO	2	5.020
			0.000	PSS	1.5	0.000
			0.000	PEM	1	0.000
			0.002	POW	1	0.002
2080207	841,799.62		7.877	PFO	2	15.754
			2.116	PSS	1.5	3.174
			0.770	PEM	1	0.770
			0.000	POW	1	0.000
TOTALS	576,015.00	366,450.00	20.048			36.481

B. Table of Mitigation Projects by HUC. The Fund has 1 mitigation project providing non-tidal wetland mitigation to this basin.

MIDDLE JAMES BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
2080204	**Forks of Rivanna**	C,M,R	10.00			10	79.53		99.53	3.32
Total Acres>			**10.00**	**0.00**	**0**	**10**	**79.53**	**0.00**	**99.53**	**3.32**
Crediting Ratio >			**1**	**5**	**5**	**1**	**2.5**	**7.5**		
Mitigation Credit Against Liability >			**10.00**	**0.00**	**0.00**	**10.00**	**31.81**	**0.00**		
Total Acres of Impacts					**20.05**					
Total Mitigation Liability (with ratios)					**36.48**					
Total Credits to offset Mitigation Liability:					**41.81**	**Surplus or (Deficit) >**				**5.33**

C. Additional Project Specific Information

Forks of the Rivanna: This 154-acre site is located at the confluence of the North and the South Forks of the Rivanna River in Albemarle County, Virginia and was purchased by TNC in 2001. The uplands established figure is highlighted because some of those acres will be credited to stream restoration. Final figures will be available once TNC has completed the stream portion of this project. The majority of the tract had been converted to row crop agriculture through deforestation, installation of a tile drain system, and channelization of existing streams. Through The Nature Conservancy's ecoregional planning process, the Lamb site was identified as important to the protection of the main stem of the Rivanna River. A depressional area located in the center of the fields was ditched and tile drained to convert it to agriculture. Based on landscape setting, hydrology, and analyses of vegetation in surrounding areas, the appropriate ecological community group to target for restoration of the agricultural fields on the site consists of Piedmont/Mountain Bottomland Forests. The objective of the wetland project was to restore a mixture of emergent and forested wetlands (20 acres) and an upland buffer (18 acres). The tile drain system had a primary outlet that was blocked in 2002 to determine the effects on hydrology. Because the project relied upon ditch plugging and elimination of the drainage tile system rather than large-scale grading, the site was planted prior to construction in 2003. The tile drains were crushed and the ditches were plugged in 2005 concurrent with the stream restoration project. Two automatic-reading shallow groundwater level monitoring wells and five manual reading shallow groundwater wells were installed in the agricultural fields in March 2002. In addition, five manual reading shallow groundwater wells and 3 piezometers were installed in 2003 and 2004 and monitored weekly for the beginning of the growing season. Results from the hydrology wells indicate that the majority of the area monitored meets the USACE hydrology requirements; however, it was observed that water levels remained higher than predicted. While this may be desirable for the establishment of hydrophytic vegetation, it was mortal for the seedlings that were planted in the area. This has resulted in the development of a freshwater marsh wetland in approximately half of the restoration area (lowest elevations) that exhibits distinct vegetative zonation depending upon seasonal water depth. From a habitat perspective the site has been utilized by a wide variety of waterfowl, snakes and mammals as have been observed during many site visits. The invasive species Johnson grass (*Sorghum halepense*) gains dominance in the upland buffer portion of the wetland restoration area and this invasive species is targeted for control beginning in 2006 as it has interfered with vegetation establishment on other portions of this site. The Nature Conservancy proposes to conduct a vegetation mapping and general site assessment in 2006 that will be used to adjust the scope of the wetland restoration acres for the appropriate wetland types and this will be subject to USACE approval. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. The Corps is evaluating remediation options including site grading, hydrologic reduction, and will review the invasive species strategies. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership and per the MOU. The Forks of the Rivanna site contains an additional 54.97 acres of upland buffer preserved that were not included in the non-tidal figures so they could be included as stream buffer acres in the stream section below.

6. LOWER JAMES RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

LOWER JAMES BASIN						
HUCs	**REVENUES**	**ALLOCATED $**	**IMPACTS (ac)**	**TYPE**	**RATIO :1**	**LIABILITY**
2080808	724,478.40	1,250,000.00	13.658	PFO	2	27.316
			1.652	PSS	1.5	2.478
			0.198	PEM	1	0.198
2080206	3,479,580.11	530,092.00	45.793	PFO	2	91.586
			0.071	POW	1	0.071
			4.053	PEM	1	4.053
TOTALS	**4,204,058.51**	**1,780,092.00**	**65.425**			**125.702**

B. Table of Mitigation Projects by HUC. The Fund has 3 mitigation projects providing non-tidal wetland mitigation to this basin.

LOWER JAMES BASIN										
Project Information			**Non Tidal Wetland**				**Upland Buffer**		**Tot NT**	**Cost in**
HUC	**Project**	**Status**	**Estab**	**Pres**	**Enhance**	**Acquired**	**Estab**	**Pres**	**Acres**	**Impacts**
2080206	**Walters**	C,M	20.00	212.80			23.00	17.20	273.00	**3.45**
2080206	**Scandia Lake**	P		64.70				29.60	94.30	**1.35**
2080208	**Stephens**	C,M	71.00	112.10					183.10	**11.32**
Total Acres>			**91.00**	**389.60**	**0.00**	**0.00**	**23.00**	**46.80**	**550.40**	**16.12**
Crediting Ratio >			**1**	**5**	**5**	**1**	**2.5**	**7.5**		
Mitigation Credit Against Liability >			**91.00**	**77.92**	**0.00**	**0.00**	**9.20**	**6.24**		
Total Acres of Impacts					**65.43**					
Total Mitigation Liability (with ratios)					**125.70**					
Total Credits to offset Mitigation Liability:					**184.36**	**Surplus or (Deficit) >**				**58.66**

C. Additional Project Specific Information

Chickahominy River (Walters) The Walters property is located near the town of Midlothian in Henrico County along the Chickahominy Swamp. The initial funding for this project was approved by the USACE in April, 2000. The 273 acre property was purchased by TNC in 2000. The Chickahominy system is important for migratory fish, such as striped bass, shad, herring, and yellow perch. The proximity of Richmond, Virginia to this area has led to increasing development pressures on the system. Development within the watershed has also increased sediment and nutrient loadings to the river. The project site consisted of a mixture of abandoned river meanders, swampland, and six agricultural fields. Based on landscape setting, hydrology, and analysis of vegetation in surrounding areas, the appropriate ecological community group to target for restoration of the agricultural fields on this site is Alluvial Floodplain - Coastal Plain/Piedmont Bottomland Forest. The preliminary feasibility study completed in 2000 determined that approximately 18 to 22 acres of the cropland could be restored to functioning wetlands. In addition to the wetland restoration activities, TNC estimated that the site would also provide approximately 210 acres of wetland preservation, 23 acres of upland buffer restoration, and ~17 acres of upland buffer preservation. A delineation of surface waters and wetlands on the forested portion of this

property was conducted and submitted to USACE in January 2006; however, this delineation has not yet been confirmed thus these acreages are subject to change.

The area proposed for wetland restoration was composed of six irregularly shaped fields that were logged, drained and converted to agriculture. Wetland and habitat restoration efforts began in late 2001 and were completed in early 2002 and included blocking ditches, contour plowing the agricultural fields to minimize surface water runoff, and planting 13,000 bare root seedlings of various native species. Wetland monitoring was initiated in 2002 with the installation of seven automatic recording shallow groundwater wells and in 2003 with six manually read wells. During the 2004 monitoring event, eleven of thirteen shallow groundwater level wells monitored in the restoration fields met or exceeded the USACE accepted standard for determination of wetland hydrology. Considerable natural colonization by volunteer woody species was both noted during field observations and supported by data gathered in 2004. Density of seedlings was estimated in vegetation plots and generally exceeded the 400 stems per acre standard with most abundant species including red maple, sweet gum, bald cypress and willow oak. Assessment of herbaceous cover in randomly located subplots within the larger vegetation plots indicated a predominance of hydrophytic vegetation and fifty-two species were identified in these subplots. Investigations of soils, hydrology and vegetation in the wetland restoration areas at the Walters tract suggest that a forested wetland community is becoming established in those areas. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Protection is by TNC ownership and per the MOU.

Chickahominy River/White Oak Swamp (Scandia Lake) The Scandia property is located in Henrico County on White Oak Swamp near the confluence of the Chickahominy River. The initial funding for this project was approved by the USACE on December 14, 2004. The 94.3-acre property was placed under easement by TNC in 2004. The Chickahominy system is important for migratory fish, such as striped bass, shad, herring, and yellow perch. The proximity of Richmond, Virginia to this area has led to increasing development pressures on the system. Development within the watershed has also increased sediment and nutrient loadings to the river.

The property consists of a 14.7-acre lake from previous sand mining operations, 29.6 acres of uplands and 50.0 acres of forested wetlands. The landowner conducted a delineation of surface waters for this site that was confirmed by USACE in 2002 as supporting information for a wetland mitigation feasibility report. During the proposal process, the USACE anticipated that wetland creation could be conducted at the site. While wetland creation may be technically possible at the site, the Corps and TNC are evaluating whether it will be feasible. Other than the easement monitoring, no additional monitoring is required for the site unless wetland creation is accomplished.

Dismal Swamp Canal (Stephens Tract): The Nature Conservancy identified the Stephens tract, located off of Cornland Road in Chesapeake, Virginia, as an important contributor to a northern spur corridor connecting the Northwest River and the Great Dismal Swamp NWR. The Stephens site added 366 acres to the approximately 1,000-acre Green Sea preserve which includes Hall, Su and Benefits tracts that were previously purchased by TNC through the Virginia Wetland Restoration Trust Fund for compensatory wetland mitigation. The Stephens parcel was purchased in 2003 and contains approximately 226 acres of forested wetland with 142 acres of prior-converted agricultural land. A USACE jurisdictional determination confirmed forested wetlands on 226 acres of the Stephens tract with some potential for forested upland restoration to wetlands.
The objective of the Stephens tract project is to restore the 142 acres of cropland to a mixture of forested wetland (112 acres) and forested upland buffer (30 acres). Wetland and habitat restoration efforts began in 2003 and 2004 included plugging of field ditches, creation of several seasonally flooded ponds, construction of a berm system, and planting of 50,500 bare root seedlings and 6,000 shrubs. Twelve automatic recording shallow groundwater monitoring wells were installed post construction in March 2004 in representative locations and twelve hand monitored shallow groundwater wells used for site evaluation in 2003 were retained for monitoring. Despite the fact that precipitation prior to March 2005 was lost to the drainage ditches, half of the automatic reading wells exceeded the target threshold for

hydrology in the 2005 growing season. Well stations that are located in close proximity to unplugged perimeter ditches experienced the least promising hydrology results and these areas will need to be examined in the future to determine if closing the interior ditches is sufficient to prevent effective drainage of a fringe larger in area than that estimated in the planning (roughly 30 acres). Observations of the vegetation in 2004 and 2005 suggested the survival of planted seedlings was good and many species displayed fairly vigorous growth. Red maple and sweet gum are the dominant colonizing, volunteer woody species and this is most obvious at the north end of the property near the existing forest line. From our observations it appears that the majority of woody species that will comprise the dominant stratum of the site are designated wetland plants according to the National List of Plant Species that Occur in Wetlands: Northeast (Region I). The 2006 growing season will constitute the third year of monitoring and given the favorable hydrological monitoring in large areas thus far, we expect the greater part of this site will meet wetland criteria. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits.
If a mitigation site is identified outside a HUC with impacts, but is on a significant tributary to that HUC, the mitigation site can be used to mitigate for the impacts. One example is the Stephens tract in Chesapeake. Although it is 0.2 miles south of the 2080206 HUC line, it drains to the Dismal Swamp Canal, one of the largest tributaries to the Elizabeth River (HUC 2080206). Also, and where appropriate, the Fund strives to accomplish projects on different sub-watersheds within specific HUCs. Eleven different projects within HUC 3010205, including those on the Northwest River, Great Dismal Swamp, and Back Bay watersheds, demonstrate this concept. For information on hydrologic unit codes (HUCs), please refer to the following URL: (http://www.dcr.state.va.us/sw/hu.htm).

7. NEW RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

NEW RIVER BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
5050001	22,848.22	0.00	0.000	PFO	2	0.000
			0.000	PSS	1.5	0.000
			0.418	PEM	1	0.418
			0.000	POW	1	0.000
5050002	7,882.25		0.000	PFO	2	0.000
			0.083	PSS	1.5	0.125
			0.018	PEM	1	0.018
			0.000	POW	1	0.000
TOTALS	30,730.47	0.00	0.519			0.561

B. Table of Mitigation Projects by HUC. The Fund has no mitigation projects providing non-tidal wetland mitigation to this basin.

NEW RIVER BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
									0.00	0.00
									0.00	
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					0.52					
Total Mitigation Liability (with ratios)					0.56					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(0.56)

8. POTOMAC RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

POTOMAC BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2070008	251,205.58	0.00	0.411	PFO	2	0.822
			0.471	PSS	1.5	0.707
			0.390	PEM	1	0.390
2070010	570,458.24		1.919	PFO	2	3.838
			0.001	PSS	1	0.001
			0.458	PEM	1	0.458
2070011	385,557.89	150,000.00	1.212	PFO	2	2.424
			1.580	PEM	1	1.580
			0.330	POW	1	0.330
TOTALS	1,207,221.71	150,000.00	6.772			10.550

B. Table of Mitigation Projects by HUC. The Fund has 1 mitigation project providing non-tidal wetland mitigation to this basin.

POTOMAC BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
2070011	Nash	C,M,R	10.00	50.00		20.00	22.65	50.00	152.65	0.60
Total Acres>			10.00	50.00	0	20	22.65	50.00	152.65	0.60
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			10.00	10.00	0.00	20.00	9.06	6.67		
Total Acres of Impacts					6.77					
Total Mitigation Liability (with ratios)					10.55					
Total Credits to offset Mitigation Liability:					35.73	Surplus or (Deficit) >				25.18

*Acquired acres not counted toward credit.

C. Additional Project Specific Information

Caledon (Nash) Property: Based on landscape setting, hydrology, and analyses of vegetation in surrounding areas, the appropriate ecological community groups to target for restoration of the

pastureland consists of Non-Riverine Wet Hardwood Forests, dominated by a mix of hardwood species including hydrophytic oak (*Quercus*) species, including the restoration of a mixed hardwood-pine upland buffer. The goal of the proposed activities is to restore the 60-acre livestock pasture area to a mixture of forested wetlands (30 acres) and upland buffer (30 acres).

In 2003, TNC constructed low-profile berms, plugged or filled several ditches and other drainage features in the pasture but did not provide for proper bedding or surface roughness. In early spring of 2004, 58 acres of the pasture was planted with 15,000 bare root seedlings representing nine different native wetland hardwood tree species. TNC installed five automatic-reading shallow groundwater level monitoring wells in representative locations in the wetland restoration area.

Vegetation and hydrology monitoring was initiated in 2004 and is planned to continue for 10 years. Based on the results of this monitoring, much of the site is not experiencing saturation and inundation sufficient to meet USACE standards in much of the wetland restoration area and planted tree survival is poor across the site. The hydrological results are due, in part, to climate where rainfall for the area was low; however, the poor seedling survival is thought to be due to weedy competition and soil compaction - both preexisting conditions from the former pasture use. Existing pasture grasses such as tall fescue, as well as some weedy species including blackberry (Rubus spp.), multiflora rose (*Rosa multiflora*) and soft needle rush (*Juncus effusus*) have contributed to both low planted tree survival and low natural colonization in many areas. Natural colonization by both native hardwoods and pines is occurring but is uneven across the site depending upon conditions such as soil characteristics, competition from existing vegetation and hydrology. A roughly 9-acre area exhibits strong wetland characteristics including dominance by FACW and/or OBL wetland plants species that indicate wetland hydrology is present, but planted tree survival and natural colonization is below the 400 stems per acre normally required for forest establishment based upon monitoring results and site observations. In order to meet the goals of the project pertaining to establishment of forested wetlands, remediation is necessary or the scope of the project must be adjusted to account for failure to meet the stated goals. The Nature Conservancy is currently working to compile the monitoring results of two years of hydrology and one year vegetation monitoring into a report for this site. We recommend that once that information is available a site visit be conducted during which both stream and wetland issues may be discussed. Monitoring is scheduled to continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits. Protection is by easement and inclusion as a Heritage natural area preserve.

9. RAPPAHANNOCK RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

RAPPAHANNOCK BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080103	251,623.00	0.00	1.500	PFO	2	3.000
			0.327	PSS	1.5	0.491
			0.000	PEM	1	0.000
2080104	1,187,594.00	24,000.00	7.096	PFO	2	14.192
			0.742	POW	1	0.742
			0.160	PEM	1	0.160
TOTALS	1,439,217.00	24,000.00	9.825			18.585

B. Table of Mitigation Projects by HUC. The Fund has 2 mitigation projects providing non-tidal wetland mitigation to this basin.

RAPPAHANNOCK BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
2080104	Wellford	D		16.40				27.60	44.00	0.08
	Rapp Phrag	O,M			80				0.00	0.06
Total Acres>			0.00	16.4	80	0	0	27.60	44.00	0.14
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	3.28	16.00	0.00	0.00	3.68		
Total Acres of Impacts					9.83					
Total Mitigation Liability (with ratios)					18.59					
Total Credits to offset Mitigation Liability:					22.96	Surplus or (Deficit) >				4.38

C. Additional Project Specific Information

Rappahannock River *Phragmites* Eradication: The Rappahannock River *Phragmites* Eradication project was sponsored by the Friends of the Rappahannock to eradicate the invasive reed grass *Phragmites australis* along 80 acres of the shores of the Rappahannock River. In response to *Phragmites* invasion along the Rappahannock River concerned landowners and public agencies formed the Rappahannock Phragmites Action Committee (RPAC) in January of 2000 and it was through this coordinated effort that funding was requested. The primary point of contact for this project was the USFWS, who was instrumental in securing permissions, requesting funding, and mapping locations of the federally endangered sensitive joint vetch (*Aechynomene virginica*) species known to occur in the watershed to prevent any risk to these populations by the spraying activities. The initial funding for this project was approved by the USACE on April 11, 2001. The treatment included the aerial spraying of glyphosate, a broad spectrum non-specific herbicide, on various *Phragmites* stands with the objective of reducing *Phragmites* cover to a point where it can be managed by ground crews. The treatment was conducted in 2001. Glyphosate does reduce cover of Phragmites; however, it is well-known that multiple treatments are required to successfully reduce cover and eradication of established populations is difficult. Grant funding secured by RPAC was used to spray in 2002, and in 2003 funding from the Trust Fund (a separate authorization in coordination with DCR in the Eastern Virginia Phragmites Control project) was utilized to spray approximately 195 acres. Subsequent monitoring completed by DCR indicated the successful control of the species in the treated areas with some re-colonization by native plants. Due to the alternating funding of this project and the spatial and temporal changes of acres treated (in response to where the invasive occurs) it is difficult to determine and exact the number of acres that were enhanced; however, the efforts of RPAC and DCR in controlling *Phragmites* in sensitive natural areas is well regarded as a necessary activity to ensure their protection. Given this imprecision the Nature Conservancy proposes that this project be credited at a higher than normal ratio for similar activities. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits.

Rappahannock River (Wellford Farms) The Wellford Farms property is located in Richmond County. The initial funding for this project was approved by the USACE on April 21, 2005. A forty-four acre portion of a larger property was placed under easement in 2005, which is held and monitored by the VOF. The purpose of the project is to preserve the existing wetlands and buffer at the site. Based on the initial site visits and various maps, TNC estimated approximately 16.4 acres of wetlands were located at the site. TNC will complete the required surface water delineation by April 2006. Following the jurisdictional determination by the USACE, TNC will request that USACE provide a credit valuation for these projects so that TNC may close them out. Other than the easement monitoring, no additional monitoring is required for the site.

10. ROANOKE RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

ROANOKE BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
3010101	191,034.60	0.00	1.720	PFO	2	3.440
			0.000	PSS	1.5	0.000
			0.279	PEM	1	0.279
			0.005	POW	1	0.005
3010102	24,477.20		0.618	PFO	2	1.236
			0.000	PSS	1.5	0.000
			0.212	PEM	1	0.212
			0.000	POW	1	0.000
3010103	1,214.40		0.015	PFO	2	0.030
			0.000	PSS	1.5	0.000
			0.000	PEM	1	0.000
			0.000	POW	1	0.000
3010104	55,624.50		0.017	PFO	2	0.034
			0.410	PSS	1.5	0.615
			0.243	PEM	1	0.243
			0.000	POW	1	0.000
3010106	147.50		0.005	PFO	2	0.010
			0.000	PSS	1.5	0.000
			0.000	PEM	1	0.000
			0.000	POW	1	0.000
TOTALS	215,511.80	0.00	2.834			5.172

B. Table of Mitigation Projects by HUC. The Fund has no mitigation projects providing non-tidal wetland mitigation to this basin.

ROANOKE BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
									0.00	0.00
									0.00	
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					2.83					
Total Mitigation Liability (with ratios)					5.17					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(5.17)

C. Additional Project Specific Information

Future Projects: Several projects in the Roanoke Basin are being evaluated.

11. SHENENDOAH RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

SHENENDOAH BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2070001	132.50	0.00	0.001	PEM	1	0.001
			0.002	POW	1	0.002
2070004	274,927.00		0.664	PFO	2	1.328
			2.151	PEM	1	2.151
			0.310	POW	1	0.310
2070005	11,184.20		0.008	PFO	2	0.016
			0.196	PEM	1	0.196
2070006	599.28		0.011	PEM	1	0.011
2070007	62,177.40		0.151	PEM	1	0.151
			0.496	PSS	1.5	0.744
TOTALS	349,020.38	0.00	3.990			4.910

B. Table of Mitigation Projects by HUC. The Fund has no mitigation projects providing non-tidal wetland mitigation to this basin.

SHENENDOAH BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
									0.00	0.00
									0.00	
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					3.99					
Total Mitigation Liability (with ratios)					4.91					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(4.91)

12. TENNESSEE RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

TENNESSEE RIVER BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
5070202	8,046.00	0.00	0.000	PFO	2	0.000
			0.090	PSS	1.5	0.135
			0.018	PEM	1	0.018
			0.000	POW	1	0.000
6010101	8,080.60	0.00	0.000	PFO	2	0.000
			0.043	PSS	1.5	0.065
			0.085	PEM	1	0.085
			0.000	POW	1	0.000
6010205	58,832.00	0.00	0.960	PFO	2	1.920
			0.000	PSS	1.5	0.000
			0.014	PEM	1	0.014
			0.000	POW	1	0.000
6010206	502,128.00		0.000	PFO	2	0.000
			4.220	PSS	1.5	6.330
			8.460	PEM	1	8.460
			0.000	POW	1	0.000
TOTALS	577,086.60	0.00	13.890			17.027

B. Table of Mitigation Projects by HUC. The Fund has 1 mitigation projects providing non-tidal wetland mitigation to this basin, however it was very recently approved.

TENNESSEE BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
									0.00	0.00
									0.00	
Total Acres>			0.00	0	0	0	0	0.00	0.00	0.00
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			0.00	0.00	0.00	0.00	0.00	0.00		
Total Acres of Impacts					13.89					
Total Mitigation Liability (with ratios)					17.03					
Total Credits to offset Mitigation Liability:					0.00	Surplus or (Deficit) >				(17.03)

C. Additional Project Specific Information

Barns Chapel Smith/Atwell Project: This is a stream and wetland restoration project in Washington County. Details will be provided in the 2006 report.

13. YORK RIVER BASIN

A. Table of Revenues, Impacts, and Allocations by HUC.

YORK BASIN						
HUCs	REVENUES	DOLLARS ALLOCATED	IMPACTS (in acres)	TYPE	RATIO	MITIGATION LIABILITY
2080105	278,850.62	40,000.00	1.334	PFO	2	2.668
			0.310	PSS	1.5	0.465
			0.456	PEM	1	0.456
2080106	753,057.00	909,200.00	5.987	PFO	2	11.974
			0.100	POW	1	0.100
			0.082	PEM	1	0.082
2080107	124,558.96		0.631	PFO	2	1.262
			0.023	PEM	1	0.023
			0.000	POW	1	0.000
TOTALS	1,156,466.58	949,200.00	8.923			17.030

B. Table of Mitigation Projects by HUC. The Fund has 2 mitigation projects providing non-tidal wetland mitigation to this basin.

YORK BASIN										
Project Information			Non Tidal Wetland				Upland Buffer		Tot NT	Cost in
HUC	Project	Status	Estab	Pres	Enhance	Acquired	Estab	Pres	Acres	Impacts
2080105	Po River Tract	Cl		5.00				15.00	20.00	0.36
2080106	Gwathmey	C,M	70.00	39.30			95.70		205.00	8.24
Total Acres>			70.00	44.3	0	0	95.7	15.00	225.00	8.60
Crediting Ratio >			1	5	5	1	2.5	7.5		
Mitigation Credit Against Liability >			70.00	8.86	0.00	0.00	38.28	2.00		
Total Acres of Impacts					8.92					
Total Mitigation Liability (with ratios)					17.03					
Total Credits to offset Mitigation Liability:					119.14	Surplus or (Deficit) >				102.11

C. Additional Project Specific Information

Mattaponi (Gwathmey) The Gwathmey project located in King William County includes two separate properties as follows: 1) the Meadow Farm tract that contains 106 acres of agricultural fields including converted wetlands and 2) the Midway tract that is 97 acres containing a mining borrow pit, forested upland and wetland and frontage on the Mattaponi River. The initial funding for this project was approved by the USACE on February 5, 2004. The property was placed under easement on June 2001 by VOF. The Conservancy placed an additional conservation easement on the property that increased protection by eliminating uses such as farming or logging and allowing for restoration. In addition to the water quality benefits inherent to wetland restoration, the protection of this parcel located along the Mattaponi River is important to conserve the rare Lamp mussel and a rare acidic oak-hickory natural community located near the site.

The Midway tract has the potential for wetland creation, upland reforestation and provides frontage on the Mattaponi River. As a result of the mining activities there is a 39.3-acre lake with steep side walls in

many locations that do not support vegetated wetlands. If deemed appropriate wetland benches could be established to support emergent wetlands, thus increasing vegetated wetland acreage and increasing benefits to wildlife. In addition, the area is largely devoid of forest vegetation presumably due to poor soils and could be re-forested. Because the activities at Meadow Farm tract have the greatest likelihood of success and the greatest potential ecological benefits, emphasis was placed upon completing them. Planning at Midway will be re-examined after Meadow Farm was implemented.

A primary goal of the Meadow Farm tract project is to replace the functions lost by unavoidable impacts to wetlands of various types within the York River watershed. In order to accomplish this goal a design was developed that utilizes the existing topography and water sources to restore the Meadow Farm site to mixture of wetland types including Palustrine forest (PFO1), Palustrine Shrub-scrub (PSS1) and Palustrine Emergent (PEM1) and upland mixed hardwood forest that will also provide riparian buffer for existing streams. In that effort all open field areas were modified to some degree to achieve the general extent and type of habitats in the design. The site activities included grading of approximately 70 acres of farm field to establish elevations suitable to support the restoration and creation of wetlands. The majority of the remaining 36 acres was prepared for planting either by dicing, plowing and/or use of a subsoil de-compaction method (ripping). The wetland restoration activities to restore the hydrologic regime at the site were initiated in January – February 2006. The site will be evaluated over the 2006 growing season to determine whether the construction meets the hydrologic goals of the various wetland areas and to allow for adjustment of these areas if necessary. Concurrent with this effort an invasive control plan will be implemented to prepare the site for planting of over 54,000 bare-root seedlings in early spring of 2007. Monitoring is scheduled to begin after tree planting in 2007 and continue for a total of 10 years, but may be increased or decreased at the discretion of the USACE. This project may not be considered closed out until USACE determines the success of the activities and the resulting credits.

Po River Site: The Po River property is located in Spotsylvania County. The initial funding for this project was approved by the USACE on March 28, 2003. The forty acre property was placed under easement in 2005, which is held and monitored by the Central Virginia Battlefields Trust. In addition to the water quality benefits inherent to wetland preservation, the protection of this parcel located along the Po River is important to conserve the threatened Dwarf wedge mussel with has been identified downstream of the site.

The purpose of the project was to preserve the existing wetlands and wooded buffer at the site. Based on the initial site visits and various maps, TNC estimated approximately fifteen acres of forested wetlands and five acres of forested upland buffer were located at the site. Based on the jurisdictional determination provided by USACE, which is yet to be confirmed, those figures will likely be reversed. Other than the easement monitoring, no additional monitoring is required for the site. The Conservancy has requested that USACE provide a credit valuation for these projects so that TNC may close them out.

Mattaponi River Site: This property is located near the town of Aylett in King William County. The initial funding for this project was approved by the USACE on August 12, 2005. The 72.5 acre property will be placed under easement when acquired, which will be held and monitored by TNC. In addition to the water quality benefits inherent to wetland and stream preservation, the protection of this parcel located along the Mattaponi River is important to TNC Conservation Targets. In addition, this portion of the river has been classified as “impaired” by VA Department of Environmental Quality’s 303d report for pH concerns.

The purpose of the project was to preserve the existing wetlands and wooded riparian buffers, and additional upland buffers, at the site. Based on the initial site visits and various maps, TNC estimated approximately thirty-six acres of undisturbed bottomland hardwood forested wetlands, including approximately five acres of naturally occurring ox-bow ponds located at the site. The remaining property is comprised of pine plantation and through an easement will remain in a rural state. The property is also bordered by approximately 4,500 linear feet of the Mattaponi River. The river is buffered by over 200’ of the forested wetland systems and oxbow lakes. The river is in fairly stable condition at this site, in part due to the presence of the wetlands and bankfull benches located along the reach. TNC completed the required surface water delineation on December 20, 2005, and will submit

the surface water delineation report to the USACE by April 2006. Once the USACE has conducted the jurisdictional determination, TNC will request that USACE provide a credit valuation for these projects so that TNC may close them out. Other than the easement monitoring, no additional monitoring is required for the project.

Appendix II: Streams

A. DETAILED INFORMATION AND TABLES

Below are tables that contain figures for each of Virginia's 14 river (or estuary) basins that detail stream impacts, revenues derived from those impacts, funds allocated to mitigation projects. The Revenue, Allocation, and Impact tables below show those categories for each basin and HUC. A second table is provided that outlines the mitigation projects for each basin and details the linear footage credit of each type of mitigation provided. Once a crediting method is agreed to, these figures can be adjusted to that method. The information for each hydrologic unit code (HUC) within the basins is provided. Underlined figures have not been confirmed by final delineations, but are to be confirmed as soon as practicable. Revenues are dollars paid into the Fund from stream impacts. Allocated Dollars are monies spent for projects. Impacts in linear feet are the lengths of streams permitted to be impacted and mitigated via the Fund (irrespective of impacted stream condition in relation to the quality of mitigation. This . Weighted RCI is explained above, and represents the condition of the impacts for a particular basin or HUC. Units of mitigation liability are the linear feet of impacts multiplied by the weighted RCI. This puts all impacts and mitigation projects into common currency so they can be compared and exchanged.

1. ATLANTIC OCEAN

A. Table of Revenues, Allocations, and Impacts by HUC.

ATLANTIC OCEAN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080110	0.00	0.00	0
2060010	0.00	0.00	0
TOTALS	0.00	0.00	0

2. CHESAPEAKE BAY BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

CHESAPEAKE BAY BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080101	0.00	0.00	0
2080102	0.00	166,138.00	0
2080108	64,702.20	0.00	843
2080109	0.00	0.00	0
TOTALS	64,702.20	166,138.00	843

3. CHOWAN RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

CHOWAN BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
3010201	57,664.00	0.00	576
3010202	6,660.00	0.00	60
3010204	0.00	0.00	0
3010205	15,840.00	0.00	198
TOTALS	80,164.00	0.00	834

4. UPPER JAMES RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

UPPER JAMES BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080201	0.00	0.00	0
2080202	0.00	0.00	0
TOTALS	0.00	0.00	0

5. MIDDLE JAMES RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

MIDDLE JAMES BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080203	140,505.00	0.00	1,184
2080204	229,335.35	385,000.00	1,886
2080205	978,223.39	0.00	8,206
2080207	1,023,607.93	0.00	6,461
TOTALS	2,371,671.67	385,000.00	17,737

6. LOWER JAMES RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

LOWER JAMES BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080206	1,139,664.61	15,600.00	8,598
2080808	310,563.00	0.00	2,468
TOTALS	1,450,227.61	15,600.00	11,066

7. NEW RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

NEW RIVER BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
5050001	6,318.00	0.00	78
5050002	0.00	0.00	0
TOTALS	6,318.00	0.00	78

8. POTOMAC RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

POTOMAC BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2070008	1,514,389.00	0.00	13,468
2070010	4,081,311.98	0.00	32,681
2070011	722,588.00	60,800.00	5,879
TOTALS	6,318,288.98	60,800.00	52,028

9. RAPPAHANNOCK RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

RAPPAHANNOCK BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080103	448,546.00	0.00	3,464
2080104	321,618.00	0.00	3,148
TOTALS	770,164.00	0.00	6,612

10. ROANOKE RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

ROANOKE BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
3010101	92,692.00	0.00	964
3010102	0.00	0.00	0
3010103	61,740.00	203,250.00	459
3010104	0.00	0.00	0
3010106	8,736.00	0.00	84
TOTALS	163,168.00	203,250.00	1507

11. SHENENDOAH RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

SHENENDOAH BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2070001	0.00	0.00	0
2070004	884,183.00	0.00	7674
2070005	13,900.00	0.00	100
2070006	0.00	0.00	0
2070007	0.00	0.00	0
TOTALS	898,083.00	0.00	7774

12. TENNESSEE RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

TENNESSEE RIVER BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
5070202	194,315.00	0.00	1,650
6010101	0.00	0.00	0
6010205	281,696.00	0.00	2,056
6010206	403,494.00	0.00	3,196
TOTALS	879,505.00	0.00	6,902

13. YORK RIVER BASIN

A. Table of Revenues, Allocations, and Impacts by HUC.

YORK BASIN			
HUC	Revenues	Dollars Allocated	Impacts (linear feet)
2080105	0.00	30,200.00	0
2080106	6,920.80	0.00	92
2080107	0.00	0.00	0
TOTALS	6,920.80	30,200.00	92

The table below is a duplicate of the one in section B above, included for convenience for comparison with the impact tables above. It provides information on the Fund's stream mitigation projects, including the basin and HUC within which the projects are located and the linear feet and type of mitigation provided for each project. Linear footages that are estimated (not based upon exact delineations) are underlined. The linear feet of mitigation are broken into commonly accepted stream mitigation categories. The project descriptions below provide better detail as to work accomplished, problems encountered, buffer widths, and partners. Because there is currently no agreement between DEQ and the Corps about how to assign mitigation credit for stream mitigation, the amounts and descriptions are provided and each agency can reach its own determinations in that regard.

Since the Corps does not distinguish between intermittent and perennial streams at this time, Cowardin types for streams are not shown. This may change in the future once the stream mitigation policies of the regulatory agencies mature. Most impacts were reported as R3 (perennial) or R4 (intermittent). Most of the mitigation projects are on similar streams except for a significant linear footage of river bank buffer restoration and preservation. The Fund has several large scale stream preservation (with limited restoration potential) projects under negotiation accounting for several million dollars in the Potomac and Rappahannock basins. These are very large projects with significant landscape scale and coverage. The also have many linear feet of streams and rivers in reasonably good to very good condition. If these projects materialize, some of the streams and their entire watersheds will be protected prior to the degradation that has befallen many of Virginia's streams.

A legend is provided below the table to explain the elements found in the table.

STREAM MITIGATION PROJECTS										
PROJECTS	**LOCATIONS**		**MITIGATION TYPES**							
PROJECTS	HUC	Basin	Restoration Acquired	Restoration	Stabilization	Preservation	Livestock Exclusion	Enhancement	Riparian Buffer Restoration	Riparian Buffer Preservation
Grays Island *	6010205	TN					6,000			6,000
Cheswick Park	2080206	LJ			104					
Lamb Tract	2080204	MJ		3,239					6,000	
Nash Tract	2070011	PO		950			1,600			
Linden Farm	2080103	RP					7,742		2,000	
White Oak Fish Pass	2080104	RP						13,600		
Gwathmey **	2080105	YK							2,400	2,500
Piedmont Farm 1	2080102	CB								6,613
Piedmont Farm 2	2080102	CB								1,550
Piedmont Farm 3	2080102	CB								1,430
Beldon	2080102	CB								2,205
Byrd	2080102	CB								978
Edwards	3010103	RO				5,220				
City of Bedford Tract	3010103	RO				788				
TOTALS (lf)			**0**	**4,189**	**104**	**6,008**	**15,342**	**13,600**	**10,400**	**15,276**

* For Grays Island, 6000 linear feet is the total and should not be counted twice except as to water quality benefits.
**Gwathmey project buffers will be evaluated and may not be used as mitigation.
*** Livestock Exclusion and Enhancement were not included in total linear footages in the Executive Summary table for Streams.

Projects: A list of project names.
HUC: Hydrologic Unit Codes where projects are located.
Basin: Basins are abbreviated. (LJ, Lower James; TN, Tennessee; MJ, Middle James; RP, Rappahannock; PO, Potomac, and CB, Chesapeake Bay)
Restoration Acquired: This refers to stream restoration sites that have been acquired but have not undergone construction measures yet. These sites are generally in the planning stage and are scheduled for restoration or are under construction contract negotiations or application for permits.
Restoration: These are sites where stream restoration construction measures have been completed. Monitoring for mitigation success has or will be initiated, and these areas will be evaluated over the prescribed monitoring period.
Stabilization: These projects are not full scale stream restoration projects, but have undergone stream bank or channel stabilization measures.
Preservation: This column refers to streams that have been acquired and will be preserved in perpetuity, generally with long term stewardship by TNC or others.
Livestock Exclusion: This column refers to the linear feet of stream where existing livestock were fenced out of the stream to improve water quality and stream stability.
Anadromous Fish Access (Enhancement**)**: Streams that were enhanced by re-introduction of anadromous fish or invasive species eradication measures.
Riparian Buffer Restoration: These are areas of upland buffer that required restoration from crop or cleared land to convert them to forested buffers, generally located along rivers.
Riparian Buffer Preservation: These are areas of upland buffer generally located along rivers that have been acquired and preserved.

15. DETAILED STREAM MITIGATION PROJECT DESCRIPTIONS

Grays Island: The Gray's Island site is located in Scott County along the Clinch River. The funding for this project was approved by the USACE on March 14, 1997. The property was originally purchased by TNC to achieve conservation efforts at Gray's and Simone's Islands, significant sites for freshwater mussels including the following federally endangered species: fin-rayed pigtoe *(Fusconaia cuneolus)*; shiny pigtoe *(Fusconaia cor)*; Appalachian monkeyface *(Quadrula sparsa)*; rough rabbits foot *(Quadrula cylindrical)*; and birdwing pearly mussel *(Lemiox rimosus)*. The site is currently owned by a private individual, with a conservation easement held by TNC.

The overall property comprises approximately 300 acres of farmland, bordered by one bank of the Clinch River. Cub Creek (both banks) is also located on the property. Livestock originally had access to both the Clinch River and Cub Creek, which contributed to stream bank degradation, in addition to decreasing water quality through the direct addition of fecal material.

Trust Fund paid for the installation of 6,000 linear feet of cattle exclusion fencing to permanently remove livestock from 6,000 linear feet of the Clinch River and Cub Creek. The fencing was placed a minimum of 75 feet from each bank. Additional riparian buffer plantings were not required as the banks were already forested by mature hardwoods composed of predominantly oak, maple, and hickory species. Since the fencing was installed, the buffer is developing a multi-story canopy and Cub Creek is showing signs of re-stabilization within the channel. The installation of alternate water sources for livestock, and additional fencing work at the site, was funded by the Tennessee Valley Authority. This project was undertaken years ago prior to more detailed stream mitigation, and therefore monitoring was not detailed and involved periodic visits for inspection of easement terms and condition of the work by TNC. Once stream mitigation crediting issues are resolved, the Corps will consider this project completed, however TNC will continue monitoring under its easement.

Cheswick Park: Cheswick Park is a 24 acre recreational county park, is located in Henrico County, near the intersection of Broad Street and Glenside Drive. The project was initiated by the County of Henrico to conduct restoration work on a headwater tributary of Upham Brook, a major tributary of the Chickahominy River that is listed as impaired for high fecal coliform counts by the DEQ. The site was identified as a priority restoration project by Henrico County's watershed management program. The funding for this project was approved by the USACE on September 25, 2001. Restoration activities were conducted along 400 linear feet of the tributary, for which 104 linear feet of restoration work was funded by the Trust Fund. The additional restoration activities were funded by the County of Henrico and the Virginia Coastal Resources Management Program.

In the fall of 2001, a series of rock step pools were constructed to address the severe headcut moving upstream through the reach. The installation of the grade control structures returned the invert of the stream to the original location. The eroding banks were also stabilized through bank shaping and sloping. No monitoring was undertaken for this project beyond periodic field inspections by the Corps.

TNC conducted a site visit with the USACE and DEQ on April 25, 2005. The group noted that the original headcut was addressed and the upstream areas were stabilized. The group members agreed that no additional work would be conducted at the site. Once crediting issues are resolved, this project will be closed. No permanent protective document was recorded beyond the protection afforded by the County and park zoning of this site. This project and a few others highlighted several issues that can be encountered when with working with partners. Partner projects now require contractual delineation of duties and responsibilities.

Lamb; Forks of the Rivanna: This 154-acre site is located at the confluence of the North and the South Forks of the Rivanna River in Albemarle County, Virginia. In the summer of 2005, TNC conducted stream restoration activities at the site including the Priority 1 relocation of an unnamed tributary to the North Fork of the Rivanna River. The relocation of the tributary involved the excavation of 1,866 linear feet of a new stable channel in the floodplain to the west of the existing degraded channel. The new

channel was stabilized with instream rock and log structures and rootwads along the banks. A series of step-pool structures were installed at the downstream section of the channel to meet the elevation of a second tributary at the site. TNC graded and shaped the banks along 1,373 linear feet of the highly incised second tributary to create a new floodplain within the channel. Instream structures were also installed to provide channel stability. The restoration activities were completed in September 2005. The channel banks and benches were planted with live stakes in March 2006.

TNC planted a 250 foot wide buffer along the right bank of the North Fork of the Rivanna River and a 250 foot wide buffer along the left bank of the South Fork of the Rivanna River, for a total of 6,000 linear feet. The survival of these plantings was greatly impacted by the presence of Johnson Grass, which is currently dominating the site. TNC is initiating an eradication program in the spring of 2006. Once the Johnson Grass has been managed, TNC will plant 200 foot wide buffers along each bank of the 3,239 linear feet of restored channels and replant the buffer areas along the North and South Forks of the Rivanna River. In addition, several hundred linear feet of the tributary upstream of the Priority 1 relocation will be preserved, pending the finalization of the easement. This section of the tributary is located within a mature hardwood forest.

The Corps conditioned its approval that TNC develop a monitoring protocol with success criteria for this project. Monitoring activities will include a longitudinal profile survey and surveys of eight permanent cross sections along the restored channels, in addition to vegetative monitoring. Yearly survey results will be compared to both the as-built survey and the previous years survey to determine if the channel is departing from stable conditions, as well as, the determined success criteria. Protection of this site is afforded by TNC ownership and governed by the MOU. Early guidance regarding the stream restoration portion of this project was provided by North Carolina State University and an area of upland buffer plantings on the site was accomplished in partnership between TNC and the Dave Matthews Band.

Caledon (Nash) Propert: The Nash property is located in King George County immediately east of Caledon Natural Area. The initial funding for this project was approved by the USACE on May 23, 2001. The property was placed under a conservation easement in June 2001 by TNC, and the easement is currently held and monitored by the Virginia Outdoors Foundation. The easement contributed to the protection of over 1,400 acres, which were dedicated as the Chotank Creek Natural Area Preserve. The Trust for Public Land negotiated the deal and other major partners included the Virginia Department of Conservation and Recreation, the Virginia Outdoors Foundation, the Chesapeake Bay Foundation, and US Fish and Wildlife Service. The protection of Chotank Creek Natural Area Preserve creates a corridor of more than 4,000 acres of protected land on the Virginia side of the Potomac River. This area is one of the most significant summering spots for the American Bald Eagle (*Haliaeetus leucocephalus*).

A section of an unnamed tributary to Chotank Creek had been channelized and relocated to serve as the water source for livestock. The livestock were preventing the colonization of woody vegetation in the pasture and causing serious stream bank and channel degradation, in addition to decreasing water quality through the direct addition of fecal material. The objectives of the project were to reverse the ditching effects and restore the forest cover in the pastureland and to restore the proper dimension, pattern, and profile to the stream channel.

In 2004, TNC conducted stream restoration activities at the site including the Priority 1 relocation of 300 linear feet of the unnamed tributary to Chotank Creek. The stream was relocated into the historic channel within a mature forest. The historic channel was in stable condition and did not require additional work. TNC also conducted Priority 2 restoration along 650 linear feet of channel upstream of and adjacent to the Priority 1 relocation. As part of this work, several instream structures were installed for grade control and bank protection. Along this section, TNC also planted a riparian buffer ranging from 50 to 200 feet wide along the right bank. The left bank did not require additional planting, as it was currently forested with a mature hardwood forest. The Trust Fund also paid for the installation of over 6,000 linear feet of cattle exclusion fencing to permanently remove the livestock from a total of 1,600 linear feet of stream channel (including the 950 linear feet of restored channel) and a small pond located on the property. As part of the cattle exclusion activity, an alternative water source was also installed at the site.

TNC is conducting annual site visits to inspect the stability of the channel beginning in 2006 and continuing through 2010. TNC will survey the two permanent cross sections along the Priority 2 segment of the channel and visually inspect the channel bed, banks, and in-stream structures. Yearly survey results will be compared to both the as-built survey and the previous surveys to determine if the channel is departing from stable conditions. The Corps will likely require that a monitoring protocol be developed for the stream work at the site.

Linden Farm: The Linden Farm property is an active cattle farm located in Orange County. The project was initiated by the Friends of the Rappahannock to conduct various stream enhancement activities to improve water quality in Mountain Run. The funding for this project was approved by the USACE on July 30, 2002. The Trust Fund placed twenty-eight acres of the property under easement in conjunction with an adjacent ninety acres the Chesapeake Bay Foundation (CBF) funded through their own program. CBF currently holds and monitors the easement on the property.

Mountain Run (one bank), several unnamed tributaries (both banks), and a pond are located on the property subject to Trust Fund work. Prior to the project activities, cattle had access to these systems, leading to the degradation of water quality through the direct addition of fecal material and sedimentation. The Trust Fund financed the installation of 10,745 linear feet of livestock exclusion fencing, which excluded cattle from 7,742 linear feet of channel and the pond. The Trust Fund also financed riparian buffer enhancement along 2,000 linear feet of the same tributary. The width of the buffer ranged from 100 feet to 300 feet along both banks. The fencing was installed in the fall of 2002 and the buffer was planted in the fall of 2003. Additional cattle exclusion measures and riparian buffer plantings at the site were funded by CBF.

CBF initiated their site monitoring in 2003. On August 4, 2005, TNC met with CBF on site to discuss the current conditions of the fencing and riparian buffer plantings. CBF noted no problems at the site during their previous monitoring events. TNC is contacting CBF annually to discuss the condition of the fencing and riparian buffer plantings at the site. The Corps has requested copies of monitoring reports from CBF and will likely consider this project completed once the crediting issue with DEQ is resolved.

Rappahannock River Fish Passages: The Rappahannock River Fish Passages Project was sponsored by the Virginia Department of Game and Inland Fisheries (DGIF) and the Virginia Commonwealth University (VCU). The initial funding for this project was approved by the USACE on December 5, 2002. The project was intended to restore historical ranges for certain species of fishes by providing passage over tributary barriers that exist on Claiborne Run and White Oak Run, both tributaries of the Rappahannock River. The scope of work included the installation of Alaskan steep-pass structures to allow the migration of anadromous fishes including shads and herrings, as well as, resident and semi-migratory fishes.

The White Oak Run passage, located in Stafford County near Fredericksburg, was installed in the Spring of 2005. TNC worked with the contractor, DGIF, and USFWS to review and conduct required changes to the passage during 2005 to assure that it would achieve the intended objective of fish passage. While not under any contractual obligation, DGIF has agreed to conduct monitoring of the fish passage. Due to landowner conflicts, the proposed passage at Claiborne Run will not be constructed. At the time of this report neither TNC, DGIF, nor VCU has identified a replacement site for this fish passage. The Corps will likely revisit the issue of the second fish passage to work toward its completion.

Gwathmey Tract: The Gwathmey Tract is primarily a wetland restoration project with potential riparian buffer restoration and/or preservation, placed under a permanent conservation easement, with yearly monitoring inspections. The site is located on the Mattaponi River. The original application included potential river buffer restoration/preservation and the Corps will require that its feasibility be resolved. The allocation of funds for this project was approved in 2004. The linear footages in the chart above are underscored until final disposition of their potential is determined.

Piedmont 1, 2, and 3 Tracts: These three tracts are located on Dragon Run and also involve small tributaries. They were acquired in three separate purchases by adjoin to create one larger tract of land.

They provide one side frontage on the Dragon and Piedmont Farms 1 contains a significant archaeological resource that is likely a Native American site. There are wide wetland buffers off of the Dragon's mainstem, along with upland areas landward of the wetlands. "The Dragon (Run) wilderness is a unique ecosystem which has been ranked second in ecological significance among 232 areas investigated in a Smithsonian Institution study which covered 12,600 square miles of the Chesapeake Bay region." (source: Friends of Dragon Run). These sites are under TNC ownership and subject to the protection provision of the MOU. There is potential for sale to a conservation buyer. Allocations were approved in July of 2003 through April of 2005.

Beldon, and Byrd Tracts: These are wetland and upland buffer preservation projects on Dragon Run and the Mattaponi River drainage divide. Riparian and/or wetland buffers are generally 200 feet or greater in width. "The Dragon (Run) wilderness is a unique ecosystem which has been ranked second in ecological significance among 232 areas investigated in a Smithsonian Institution study which covered 12,600 square miles of the Chesapeake Bay region." (source: Friends of Dragon Run) Sites contain or are contiguous with habitat for bald eagles and rare plants. Sites placed under permanent conservation easements, with yearly monitoring inspections. Original allocations approved in 2003 and 2004.

Potomac River Tract: The Fund is currently negotiation for purchase of a large tract of land on the Potomac River that could protect ~40,000 linear feet of high quality streams. The approved allocation is between $2-3 million. Due to the sensitivity regarding land purchase negotiations, no additional information can be disclosed at this time.

Mattaponi River Site: The Fund is currently negotiating a land acquisition deal to preserve wetlands and streams on a property near the town of Aylett in King William County. The initial funding for this project was approved by the USACE on August 12, 2005. The 72.5 acre property is proposed to be placed under an easement to be held and monitored by TNC.

The site has one ditch that may be suitable for wetland enhancement and a small amount of restoration. On December 20, 2005, TNC completed a delineation of surface waters and wetlands. The property is bordered by the right bank of the Mattaponi River, which is buffered by forested wetland systems and oxbow lakes. The river is in fairly stable condition at this site, in part due to the presence of the wetlands and bankfull benches located along the reach.

Once the land deal has been finalized, the Corps will confirm the jurisdictional determination. Wetland and stream preservation acreage and linear feet will be determined based on the confirmed delineation. Other than the easement monitoring, no additional monitoring will be required for the project unless some amount of restoration is accomplished.

Cumberland Marsh: TNC's Cumberland Marsh preserve is a 1,094 acre preserve located along the southern bank of the Pamunkey River in New Kent County. The preserve, a mixture of freshwater tidal marsh and wooded upland, provides habitat for wetland species and migrating waterfowl, and has the world's largest population of the federally threatened plant sensitive joint vetch (*Aeschynomeme virginica*).

Two small ponds (approximately 9 acres) were created on the property by impounding a small unnamed stream to Holts Creek many years ago. On July 1, 2005, the Corps approved funding for TNC to conduct a feasibility study to remove the two dams and restore the natural stream channel and associated wetland and upland habitat. TNC is currently developing a contract with a consultant to conduct this study. Based upon information gathered during site visits, TNC estimates that approximately 3,000 linear feet of stream channel may be potentially restored and several acres of tidal wetlands may be potentially created at the site. The Corps will work with TNC and FWS to determine if sensitive joint vetch could be colonized in the tidal wetland restoration areas. This site is protected as a TNC preserve.

Apple Orchards Mountain (Edwards Property, Peaks of Otter): The Edwards property is located on the Peaks of Otter mountain range in Bedford County. The project was initiated by the Western Virginia Land Trust (WVLT) to preserve the pristine stream channels and buffers located on the 53 acre parcel.

The area also provides habitat for the indigenous Peaks of Otter Salamander. The funding for this project was approved by the Corps on June 7, 2005. WVLT acquired the property in August 2005. The property will ultimately be purchased by the National Park Service (NPS), in part, to provide protection and management of the Blue Ridge Parkway system. Stewardship of the property is the responsibility of WVLT, and ultimately the NPS through their management plans for the area.

Little Stony Creek and three unnamed intermittent tributaries are located on the property. The stream channels are in stable condition and require no restoration or enhancement activities. The project parcel and surrounding properties are pristine, mature, mixed hardwood forests with virtually no disturbances. The project is adjacent to two parcels currently owned by the NPS and adjacent to a parcel protected by a Virginia Outdoors Foundation (VOF) easement. The majority of the watersheds are included in the parcel and/or on NPS land. There is minimal development potential upstream due to the surrounding property's slope and ownership. The site is also adjacent to and south (downstream) of the VARTF approved City of Bedford project.

TNC completed a jurisdictional delineation that was confirmed in March of 2006, and determined that 5,220 linear feet of stream channel is preserved at the site. Of this total, approximately 3,500 linear feet of channel has both banks located on the property with a minimum of 100 foot wide wooded buffers (the majority of the buffer exceeds 200 feet). Approximately 1,720 linear feet of the left bank of Little Stony Creek is located on NPS land, which will by protected by the agency.

There is no additional monitoring required for this site. The project will be closed once the property is sold to the NPS and the crediting issue has been resolved.

Apple Orchards Mountain (City of Bedford, Peaks of Otter): The City of Bedford property is located on the Peaks of Otter mountain range in Bedford County. The project was initiated by the Western Virginia Land Trust (WVLT) to preserve the pristine stream channels and buffers located on the 13.75 acre parcel. The area also provides habitat for the indigenous Peaks of Otter Salamander. The funding for this project was initially approved by the USACE on June 7, 2005. WVLT acquired the property in March 2006. The property will ultimately be purchased by the National Park Service (NPS), in part, to provide protection and management of the Blue Ridge Parkway system. Stewardship of the property is the responsibility of WVLT, and ultimately the NPS.

Little Stony Creek lies along the eastern edge of the property. Along the majority of the reach, only the right bank of the channel is located on the parcel. The stream channel is in stable condition and requires no restoration or enhancement activities. The project parcel and surrounding properties are pristine, mature, mixed hardwood forests with virtually no disturbances. The project is surrounded on three sides by NPS land. The majority of the watershed is included in the parcel and/or on NPS land, and there is minimal development potential upstream due to the surrounding property's slope and ownership. The site is also adjacent to and north (upstream) of the VARTF approved Edwards project.

TNC completed a jurisdictional delineation that was confirmed in March of 2006, and determined that 788 linear feet of stream channel is preserved at the site. Of this total, approximately 300 linear feet of channel has both banks located on the property with a maximum buffer along the right bank of 50 feet and the buffer width along the right bank exceeding 200 feet. Approximately 488 linear feet of the left bank of Little Stony Creek is located on NPS land, which will by protected by the agency.

There is no additional monitoring required for this site. The project will be closed once the property is sold to the NPS and the crediting issue has been resolved.

Rappahannock River Easement (City of Fredericksburg): The Nature Conservancy is currently negotiating a land acquisition deal to purchase a conservation easement on an approximate 4,232-acre tract owned by the City of Fredericksburg. The initial funding for this project was approved by the USACE on June 30, 2003. This tract lies in the counties of Stafford, Spotsylvania, Culpeper, Fauquier, and Orange. The property to be protected by this easement creates a mostly un-fragmented riparian

corridor immediately upstream of the Embrey dam, enhancing the aquatic habitat for American shad and other anadromous fish that has only recently been made accessible by the removal of that obstacle. The purchase of this easement will preserve an estimated 301 acres of wetlands and provide riparian buffer preservation along an estimated 115,389 linear feet (21.9 miles) of the Rappahannock River, 61,354 linear feet (11.6 miles) of the Rapidan River, and 169,922 linear feet (32.2 miles) of tributaries to these rivers (total of 65.7 miles). The proposed buffer preservation includes a minimum 100' wide (per bank) buffer with highest protection along the entire project, with limitations on the use of the remainder of the property, which averages 650 feet wide along the river corridor. The Nature Conservancy and either the Virginia Outdoors Foundation (VOF) or the Virginia Department of Game and Inland Fisheries may co-hold the easement. These partners along with the Corps will assist in the enforcement of the easement if needed.

Appendix II: Tidal Wetlands

A. DETAILED TIDAL MITIGATION PROJECT DESCRIPTIONS

Please refer to the table and explanations above for project acreages. Also, final delineations and credit accounting could result in changes to some of the acreages in future reports. Final delineations and project close outs are high priorities for the Fund in 2006.

Dameron Marsh: Primarily a non-tidal wetland restoration with areas of tidal marsh re-generation, upland buffer restoration, and preservation of tidal and non-tidal wetlands. Hydrologic restoration is favorable, and vegetative establishment of native species and natural communities is favorable, with some Phragmites problems that are being managed. Parts of the site provide habitat for northeast beach tiger beetles (federal endangered), and bald eagles also use the site. Site fronts on the Chesapeake Bay, and restoration eliminated direct farm chemical inputs into the Bay. Wetland monitoring and monitoring for *Phragmites* treatments are ongoing. Delineation of resource types will occur in 2006. Original allocation approved in 1997.

Trimmer Tract: Preservation of tidal marsh and adjacent uplands. Restoration potential will be investigated concurrently with the delineation, which will be accomplished in 2006. Original allocation approved in 2000.

Eastern Va Phragmites Eradication: Helicopter spraying to reclaim forested and emergent tidal wetlands on multiple sites on state owned lands in Eastern Virginia. The strategy is to reduce phrag coverage to a point where it can be managed by ground crews. Initial monitoring reports indicate favorable lethality but that additional treatments will be required. (see more detailed description in non-tidal wetland section above) Original allocation approved in 2004.

Rappahannock River Phragmites Eradication: With the information available at this time, this project was moved into the non-tidal section. The Corps will request a delineation of the types of habitat treated as part of the close-out for this project.

VMRC Elizabeth River Oyster Project: The purpose of this project is to help restore native oyster (*Crassostrea virginica*) populations in the Lower Chesapeake Bay. The initial funding for this project was approved by the USACE on July 30, 2002. This project was sponsored by the Virginia Marine Resources Commission (VMRC). VMRC proposed to construct an oyster reef in the Southern Branch of the Elizabeth River near Deep Creek in Chesapeake. The reef is composed of oyster shells to intertidal heights of approximately five feet mean low water, and the structure is approximately 300' long by 50' wide (0.34 ac.). The reef was constructed according to plan in 2002. Reporting made available to TNC by VMRC in 2004 indicated poor colonization of the reef up to that point, although it was suggested that this was due to climate (rainfall). Additional monitoring is continuing. Final results will influence future requests for funding.

Eastern Shore Oyster Reef and SAV Restoration: These two projects were approved in 2005 and are being managed by the TNC Virginia Coast Reserve Program. The oyster reefs will total 4 acres and the SAV restoration will cover 10 acres. Reefs and SAV beds in this location have shown less susceptibility to the disease and other damaging factors found in the inland waters of the Chesapeake Bay and Elizabeth River. These projects will be monitored as per a plans that remain to be submitted and approved.